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CARDIOSPASM*

PORTER P. VINSON, M. D.
Section on Medicine, Mayo Clinic,
ROCHESTER, MINN.

Diffuse dilatation of the esophagus without anatomic stenosis, usually known as cardiospasm, has been recognized for more than a century, the first case having been reported by Purton in 1821.

In 1878, Zenker and von Ziemssen noted seventeen cases in the literature, but of late, owing to the rapidly developing interest in esophageal lesions and improvements in the technic of examining the patients, many cases are being recognized. Plummer reported forty cases from the Mayo Clinic observed previous to 1908, and 500 additional cases have been observed since then.

In spite of the large number of cases observed, the cause of cardio-spasm is still undetermined. Any one of the many theories advanced does not satisfactorily explain the majority of cases. The more one sees of the condition, the more apparent it becomes that a disturbance in the nerve-muscle mechanism of the entire esophagus is the causative factor. No other lesion in the esophagus causes such marked dilatation above the point of constriction and therefore the factor of loss of tone of the esophageal muscle above this point is quite as much to be considered as the stenosis at the cardia (3) (Fig. 1).

Fig. 1. Roentgenogram of diffusely dilated angulated esophagus.

In order to avoid confusion in diagnosis and treatment, it is necessary to make a sharp distinction in the classification of patients having symptoms of food obstruction at the cardia without anatomic stenosis. Many persons have varying degrees of spasm at the cardia, and it is frequently a secondary manifestation of disease in the gallbladder. In numerous cases of psychoneurosis, there may be a sensation of obstruction at the cardia, along with the ordinary globus hystericus. In none of these, however, can obstruction at the cardia

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Fig. 2. Boy of seven whose symptoms of cardiospasm began at the age of three

be demonstrated on roentgen-ray examination. The term "cardio-spasm" should be reserved for these cases of definite obstruction at the cardia demonstrated by the roentgen ray, without anatomic stenosis, and with or without dilatation of the esophagus above the point of obstruction. In the latter group the patients are not necessarily neurotic and there is no evidence to justify the opinion that psychoneurosis is an etiologic factor.

The ages of the patients varied from five to eighty-three years; in one of them symptoms began at the age of three years (Figs. 2 and 3). About one-third of the patients

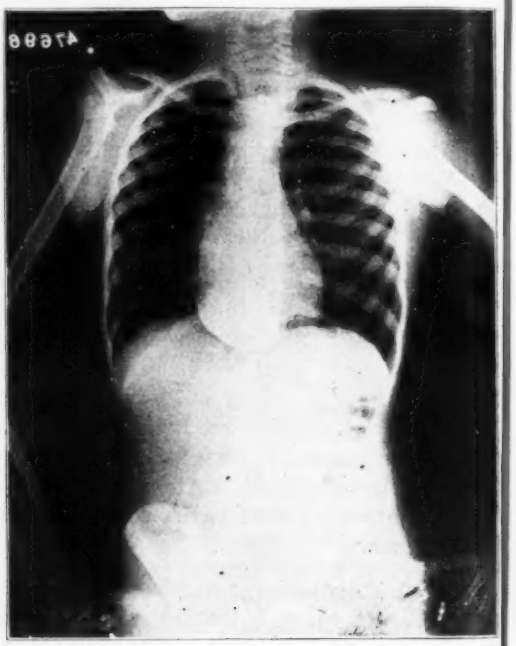

Fig. 3. Roentgenogram of the esophagus patient shown in Figure 2.

were in the third decade. They had had symptoms from two months to forty-five years, averaging seven and one-half years. Two hundred ninety-four were males, and 206 were females. Eighty-five had had a sudden onset of symptoms; the others had had a gradual onset, or it had not been noted.

SYMPTOMS.

The three cardinal symptoms of cardiospasm are dysphagia, pain and regurgitation. Although dysphagia in my experience was not always noted in the early stages

of the disease, it was the most common, and until it appeared the diagnosis of an esophageal lesion could not be made.

The onsent of dysphagia was frequently sudden and the initial obstruction occurred while the patient was eating solid food, especially an apple, or when swallowing cold water. At first, the sense of obstruction was intermittent, but as the disease progressed, it became more and more pronounced, and complete closure occurred in about a third of the cases, lasting from twenty-four hours to eighteen years. (4) The striking feature of the dysphagia was that although the patient may have been able to wash solid food into the stomach by drinking large quantities of water, he was not able to swallow water alone, particularly if it was cold.

Because of the marked dysphagia, loss of weight was common. One of the patients lost 100 pounds in a year. Many of the patients had devised means by which food could be forced into the stomach. Uusally they partly filled the esophagus with solid food and then drank several glasses of water in rapid succession, pressing the chin on the chest and increasing intrathoracic pressure, when the entire content of the esophagus would pass suddenly into the stomach. A part of the water unmixed with food was then regurgitated.

Two hundred sixty-two of the patients had epigastric pain of varying severity; with many of them, it was the chief feature of the disease. Severe attacks of epigastric pain antedated dysphagia by months or years in many cases; a diagnosis of gall stones had usually been made. The pain of cardiospasm may simulate that of gallstone colic or angina pectoris.

With the onset of dysphagia, the pain usually became less severe and in some cases disappeared entirely. At times the pain was definitely associated with deglutition, but in most instances it occurred independently. The pain radiated from the epigastrium to the back, substernally, or into the neck or ears. It was frequently severe enough to demand a hypodemic injection of morphin; in other cases it would be relieved by sipping warm water. With the onset of dysphagia, regurgitation was common. At first, the regurgitation came immediately after the ingestion of food, but later, after the esophagus had become widely dilated, it was delayed for hours or even days. Nocturnal regurgitation of food or mucus was noted in 181 cases. The regurgitation at night with frequent aspiration of particles of food caused chronic pulmonary suppuration in several cases, and milder pulmonary symptoms from aspiration and the pressure of a dilated esophagus filled with food and mucus, were noted in many others. Hiccough was occasionally noted as an early symptom.

CLINICAL AND DIFFERENTIAL DIAGNOSIS.

A diagnosis of cardio-spasm can usually be made on the history alone, but in other cases the distinction from a malignant lesion near the cardia may be difficult without careful study.

The long duration of symptoms with as much difficulty in swallowing liquids as solids, epigastric pain, nocturnal regurgitation, a smooth obstruction at the cardia on roentgen-ray examination, with or without dilatation of the esophagus, and the absence of any pronounced obstruction to the passage of a 45 French sound, when guided into the stomach on a previously swallowed silk thread, are sufficient to warrant the diagnosis of cardiospasm. In a few cases an esophagoscopic examination may be indicated.

Benign stricture at the cardia is very rare and carcinoma of the cardia, diverticulum of the lower esophagus or cardia, and hernia of the stomach through the diaphragm are the lesions from which cardiospasm must be distinguished; this, in most cases, is not difficult.

TREATMENT.

There have been numerous types of treatment advocated in the management of cardiospasm, chief of which has been the use of antispasmodic drugs, mechanical dilatation of the cardia, or some type of operation for enlarging the esophageal opening of the cardia or anastomosing the dependent portion of the esophagus with the stomach. Usually there is a varying degree of esophagitis occasioned by the prolonged retention of food in the esophagus (Fig. 4). Preliminary treatment

Fig. 4. Esophagus from a child of nine who died from starvation before dilatation could be done. Note marked esophagitis.

of this by lavage is neither effective nor necessary. A few patients are temporarily relieved by increasing doses of atropin, but a lasting result is not obtained.

Plastic operation on the cardia, as is the case with esophago-gastrostomy, is attended with considerable risk and prolonged hospitalization, and the results have not been satisfactory. The most efficient treatment has been the forcible dilatation of the cardia. This was first accomplished by making a gastrotomy and inserting one and then several fingers into the cardia. Later it was found that an

Fig. 5. Patient before dilatation

expanding type of dilator (5) could be introduced through the mouth into the cardia.

The instrument used in the Mayo Clinic is the Plummer modification of the Russell hydrostatic dilator. This is guided into the cardia on a previously swallowed silk thread. The passage of ordinary metal sounds rarely afford relief, the cardia not being stretched sufficiently to overcome the obstruction. The patients usually experienced severe pain at the time of the dilatation, and about 10 per cent had a severe recurrence of the pain within thirty-six hours after the treatment. Hospitalization for tewnty-four hours afte dilatation is desirable, and patients should be kept under observation for at least a week.

RESULTS.

Dilating the cardia results in immediate relief from dysphagia in practically all cases, and following the increased intake of food and water, there is frequently an extraordinary gain in weight (Figs. 5 and 6). One of the patients who had had complete esophageal obstruction for eleven days gained 22 pounds during the first five days after dilatation.

Seventy-five per cent of the patients were cured, and the majority of those having a recurrence were permanently relieved by a second stretching. When there was a recurrence, it usually occurred during the first six months after dilatation and the symptoms were rarely as marked as before the first stretching. Failure to relieve a patient by dilating usually indicated that the expanding dilator had been pulled into the esophagus, or pushed into the stomach; thus stretching of the cardia was not accomplished.

When the esophagus was widely dilated above the point of obstruction there was probably very little increase in the muscular tone after treatment, but this permanent dilatation did not interfere with deglutition. Roentgen-ray studies were made in cases after dilatation, usually without demonstrating obstruction at the cardia. There was moderate obstruction after dilatation of the barium meal without symptoms of obstruction to food in a number of cases. In this group there have been no more recurrences than in cases in which the Roentgen-ray was entirely negative.

Fig. 6. Patient two years after treatment.

Six patients died from rupture of the cardia. Dilatation must always be considered a surgical procedure and an occasional death can hardly be avoided.

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DISCUSSION.

Dr. Homer Dupuy (New Orleans): To some of us it may appear that Doctor Vinson has purpusely been drawing a distinction without a difference, yet to my mind he has approached a most difficult problem in a masterly way. He has made one very practical point which we must all take home with us, and that is the comparative rarity of cardio-spasm as a psychoneurosis. H. P. Mosher of Boston, has certainly done some very original work in cardio-spasm, and I am approaching his viewpoint, that behind every cardio-spasm, as already intimated by the essayist, is a real organic neuro-muscular alteration in the esophagus. Have you ever asked yourself why does cardio-spasm occur so often at the same anatomical point, at the lower end of the esophagus? There must be something about those parts that makes them susceptible to this neuro-muscular alteration. Mosher tells us that cardio-spasm can be brought on by morbid changes in the stomach, in the gall bladder, and even in the appendix.

I can see no reason why a laryngologist should have been chosen to open the discussion, except that the chairman of the section must have felt, as I do, that more esophageal work might enlighten us in regard to cardio-spasm. I wonder if Doctor Vinson does think that esophagoscopy is only necessary in acute cases to make a diagnosis. That might be true if we were sure we are dealing in chronic cases only with an innocent lesion, but as he just told us, it is a very difficult thing sometimes to differentiate malignancy at the lower end of the esophagus from a pure case of cardio-spasm. We all know, and are taught by the X-ray findings, that obstructions high up in the esophagus are in a great majority of cases malignant. And it is true that it is very difficult from an X-ray picture of the lower end of the esophagus to differentiate malignancy in those parts from pure cardio-spasm. Therefore, it seems to me we should plead for more frequent use of the esophagoscope, especially if there is the least suspicion that we are not dealing with a pure, unadulterated picture of cardio-spasm. I believe the terrible mortality in esophageal cancer, 100 per cent., might be reduced if we could only catch these cases in their incipiency, and yet if we are able to abide by the advice that the esophagoscope shall be used only in acute cases of cardio-spasm, can we hope to master the question of malignancy at the lower end of the esophagus?

Dr. Upton Giles (New Orleans): I am sure that the paper and demonstration so thoroughly and lucidly presented by Doctor Vinson is apprecited by all of us. However, it is a typical Vinson paper and it does not leave much comment for the internist discussing the paper.

In treating of cardio-spasm it is well to bear in mind that the normal resting esophagus is empty, except for a narrow column of air retained by a firm closure of both orifices maintained by a contraction of circular muscular fibres of the esophagus at this point.

It is estimated that the closure of the cardiac orifice thus maintained is sufficient to support a column of water two thirds the height of the esophagus. Normally the circular muscles fibres at both orifices are anatomically relaxed during the act of swallowing, allowing food and drink to pass unhindered in the stomach. Food and drink may be arrested and retained if the neuro-muscular mechanism of the esophagus is disturbed. Stagnation of food thus retained may give rise to irritation bringing about reflex spasm of the circular muscle fibres of the cardiac orifice thus increasing the resistance to the passage of food.

Anatomically, two forms of idiopathic dilatation of the esophagus may be distinguished,—fusiform dilatation with marked hypertrophy of the muscle wall of the eosphagus; dilatation or slight dilatation with little hypertrophy of the esophageal wall. The first is the common form. The second is favored by atony of the muscle wall and a rapid accumulation of food stretching the esophagus before muscular hypertrophy has had time to develop.

The capacity of the normal esophagus is about 100 cc. Kinnicut demonstrated a spasm in which the capacity was 1,800 cc. 500 to 600 cc. is the usual capacity.

In one of Sippy's fatal cases the dilated esophagus held 500 cc. and the hypertrophied muscle wall was 9 mm. in thickness. The normal esophageal muscle thickness is from 1 to 2.3 mm.

Pathological specimens show no evidence of muscular atrophy or hypertrophy at the seat of obstruction. The powerful contractions of the hypertrophied muscle of the dilated esophagus, however, fail to empty the esophagus completely, because there is less resistance above, consequently a portion of all the contents may be forced upward.

This condition is unlike most chronic conditions, the longer the duration of the cardio-spasm the easier the management, *i. e.*, I have one case of cardio-spasm of 20 years duration that is easily managed with simple measures. Another case of cardiospasm of less than six months duration ended fatally.

As to treatment—in mild cases it may be sufficient to give a soft, warm, non-irritating diet, combined with bodily and mental rest. Foods should be taken slowly; chemical, mechanical

and thermal irritants should be avoided. Bromides may be of some value in combating the condition.

However, I am of the opinion that severe cases of cardio-spasm should receive intervention from the specialist.

Dr. R. C. Lynch (New Orleans): I, too, have enjoyed Doctor Vinson's paper very much, and in order to cut out any thrills I will state my disagreements right at the start.

First of all, there is nothing anatomically so far as I know, either from muscle coats or nerve supply which indicates any special construction of the lower end of the esophagus as differing from any other portion. In other words, there is no more reason anatomically why we should have a spasm at the cardiac end of the esophagus than at any other portion of the gastro-intestinal tract from one end to the other.

Second, 99 per cent. of the esophagus is intra-thoracic, and all the lesions which have been demonstrated on the screen and all the lesions which have been called cardio-spasms are intra-thoracic. The stomach and terminal portion of the esophagus is intra-abdominal. Therefore, the bulk of the pathology is intra-thoracic. The esophagus slips into a cone of the diaphragm just like your arm slips into a coat sleeve. It is surrounded by the lower portion of the posterior lobe of the lung and on deep inspiration expansion of this portion of the lung will close the esophagus momentarily. Second, the lung crosses the diaphragm, passes behind the esophagus, so that any backward pressure would close the esophagus. The esophagus at its terminal portion bends at a right angle. There are two ligaments which are attached from the lung tips to the esophagus in the intra-thoracic portion, and one from the horizontal arm to the under surface of the diaphragm. The esophagus is further interfered with normally by passing through a tunnel in the liver, being surrounded at practically three-fourths of its circumference with the liver, and therefore any adhesions intra-abdominally in the upper quadrant of the abdomen would produce lesions which are called cardio-spasms. Second, intra-thoracic conditions, tuberculosis particularly, produce adhesions of the esophageal wall and will produce constriction of the esophagus and give rise to cardio-spasms. Adhesions about the diaphragm and in the cone of the diaphragm will give rise to constriction at the lower end of the esophagus. The place as shown shows it is a constriction and not a spasm. I believe with octory Dupuy, that cardio-spasms are pathological and not purely spasmodic.

The treatment of the condition is absolutely correct. The dilators which are introduced check the adhesions and bring about a cure that Doctor Vinson speaks of and which is very dramatic.

I would call your attention to the results of Doctor Iglauer, who has been working on cardio-spasms by the pneumo-perineal route and the X-ray. He took an X-ray picture of the patient before introducing the air into the perineal cavity, then he took the picture of the patient during the introduction of the air into the perineal cavity, and immediately during this operation the patient complained of something letting go and the cardio-spasm was cured. No intra-esophageal dilatation was used at all. The air evidently broke up the adhesions which permitted the lower end of the esophagus to function and no dilatation was used. Jackson speaks of a baby two days old with cardio-spasms in which passage of the esophagoscope cured the spasm. We have had seven or eight cases of this same nature in which the passage of the esophagoscope straightened out adhesions about the lower end of the esophagus through the liver tunnel, and one passage of the esophagoscope, like the dilators of Doctor Vinson's operative procedure, cured the patient the same way.

I want to call your attention to a recent article by Giese, who delivered the Seeman lecture before the British College of Surgeons. He reports that in 7,000 esophageal conditions there were 62 per cent. that were carcinoma at the lower end of the esophagus. The symptoms as described by Doctor Vinson would coincide almost exactly with the experience of Doctor Giese, and therefore I am heartily convinced that careful examination of the lower end of the esophagus with the esophagoscope is absolutely essential for a diagnosis, and it would be no more trouble than to pass an odd shaped bougie. With the dilatation of the esophagus and suction apparatus, the whole wall can be thoroughly examined. Giese also reports 7 cases of carcinoma of the lower end of the esophagus treated by radium, which I believe is the first on record, and it makes us at least hopeful about this 100 per cent. mortality that we have had up to this time.

As to the cases of spasms which last for eighteen years or five years, or two years, there is nothing in the ligaments of the diaphragm which have to do with spasmodic action, there is nothing in the musculature of the lower end of the esophagus which differs from the upper end or the middle part. Globus hystericus in about 80 per cent. of cases involves the upper end of the esophagus. Drugs do not cure it, as Dr. Vinson admits. Drugs help for a short time, but they do not cure, and if it was pure spasmodic action drugs might cure.

The angulation which Dr. Vinson speaks of is simply an X-ray of the normal bend of the esophagus that occurs in practically all strictures of the lower end.

Dr. Vinson (closing): I appreciate this discussion very much. There have been so many questions brought up that I am afraid I will not be able to answer all of them. I am glad that Doctor Dupuy mentioned the question of psychoneurosis being a negative factor in cardio-spasm. Spasms at the cardia may be secondary to various intra-abdominal lesions; cardio-spasm is an entirely different proposition. Cases of cardio-spasm associated with disease in the gall-bladder are as readily relieved by dilatation the cardia as those in which no secondary pathology can be demonstrated and are not relieved by the removal of the gall-bladder.

I did not intend to belittle the use of the esophagoscope but in cardio-spasm this examination is unnecessary in the majority of cases. The Roentgen examination is of value, but is not absolutely diagnostic. Doctor Giles' point that the duration of symptoms is not an indication of the curability of the disease is well taken. As a matter of fact, the greater the duration of symptoms, the easier they are to cure. Doctor Lynch has stated that there is no anatomical reason for spasmodic obstruction at the cardia. Some anatomists have demonstrated a circular muscle at the cardia, while others deny its presence. However, I have never seen a spasm at any other point in the esophagus except at the cardia. In post mortem examinations of patients suffering from cardio-spasm, we have never observed anything in the esophagus that resembled a scar, nor have we been able to demonstrate any adhesions around the cardia. A cicatricial structure will be relieved by the passage of sounds, but as a rule, cardio-spasm will not be benefited by any other means than the forcible dilatation of the cardia.

FOCAL INFECTION.*

S. E. EASON, M. D.,

NEW ALBANY, MISS.

In writing a paper on such a subject as this, I realize that in the short time allotted me, and with the facilities at my command as a general practitioner I can merely skim the surface, but I hope by this short paper I may remind some one of the many pitfalls that lie in his path as a diagnostician which may cause some one to dig out the cause of disease instead of masking his symptoms by drug therapy.

Prior to 1912 we knew very little of focal infection except in a very general way. We knew that abscess of the liver was often caused by amebic ulcers, that typhoid fever was a general infection from Peyer's patches and things like this. But we supposed rheumatism, neuritis and diseases of this class were specific infections.

Not until the investigation of Rosenow and his assistants, Billings and others, made their wonderful discoveries, did we begin to see what focal infection is.

The discovery that focal infection in almost any part of the body may be the cause of pathological lesions elsewhere aroused the careful diagnostician to search closely for these foci.

The teeth and tonsils were first suspected and many sound teeth and healthy tonsils were sacrificed before we found there were other foci equally as guilty as they.

It remained for Rosenow and his assistants to show us the real facts and proof of focal infection. By experiments he has shown that peptic and duodenal ulcer, cholecystitis, endocarditis, myositis, neuritis, nephritis, arthritis, appendicitis, ulcer of cornea, stomach and duodenum and many other diseases are due to foci of infection in the teeth, tonsils, lymphnodes, bronchi, urethra, appendix, sinuses of head, uterus, prostate and other foci. The experiments of these investigators show conclusively the cause of disease.

For instance, the bacteria from infected teeth, supposed to cause myositis, were injected intravenously into rabbits and on being killed the rabbits showed hemorrhage into and degeneration of the identical muscles.

Finally a culture from the affected muscle was injected intravenously into

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another rabbit with the same result as from the original focus. The same was proven by cultures from diseased kidneys, ulcers, cholecystitis and other pathological lesions, in each case the original disease being produced.

In one experiment culture from apparently slightly diseased tonsils, with rheumatism, was injected intravenously into a rabbit with reproduction of identical disease. A culture from another man's tonsils apparently more diseased but with no constitutional symptoms produced no pathology in a rabbit.

This proves that all foci of infection are not of the same virulency. The most virulent bacteria so far discovered from the standpoint of focal infection is the streptococcus hemolyticus, but other strains of streptococci and staphylococci together with colon bacilli, tubercle bacilli, endemebae, pneumococci, micrococci catarhalis, bacilli influenzae and others will cause pathological lesions from foci of infection.

One of the latest experiments in the study of focal infection, and one of the most important to us in general practice, is by Curtis of Chicago. He describes a case of spontaneous abortion following one year after the birth of a diseased child. The urine of the mother showed upon culture streptococcus hemolyticus with no symptoms in urinary tract. The culture was intarvenously injected into a pregnant rabbit which resulted in abortion or absorption of fetus in every case. Later it was found that the husband of the woman had attacks of diabetes caused by infected teeth from which a culture showed the same bacteria found in the original case. This was also recovered from his urine. Removal of his teeth cleared up his diabetes and the mother later gave birth to a healthy child.

The intravenous injection of bacteria from his teeth produced the same symptoms in rabbits. He reports other cases, one in particular, in which three abortions occurred in succession. In this case he found the streptococcus hemolyticus in secretions from frontal sinus and in her urine.

The frontal sinus was treated, with kidney lesions disappearing, and birth of a healthy child in the next year. This case and numerous others of similar foci of infection were proven by injection of cultures in rabbits producing, in every case where streptococcus hemolyticus was found, abortion or absorption of fetus. I have seen several cases of abortion that I know were caused by same conditions; also cases of birth of ill developed babies with diseased placentae.

This should remind us in all cases where we treat our pregnant cases early to clear up these foci and save many babies otherwise lost, and save women from puerperal complications and nephritis. Many of our cases of eclampsia could be prevented although we have in the past known nothing of the cause. Doubtless many other obscure etiological factors will yet be found in this way.

We may be asked why some people have diseased teeth, gums, tonsils and other foci of infection and never show pathological lesions. This is caused in various ways. All foci are not of the some virulency. All patients have not the same metabolism. All have not the same degree of natural resistance and all are not subjected to the same degree of lowered resistance. A sinus infection is more virulent when the patient develops a cold. Also his resistance is lowered. The resistance of the stomach to ulcer infection is lowered by over-eating; the appendix and gall bladder are more susceptible to infection when the patient is constipated, or following acute indigestion or fermentation of food in the intestine.

In treating chronic diseases we often find that we get no results until we accidentally discover certain foci of infection and treat the cause. We all remember when we were

taught to give salicylate of soda for tonsilitis developing during a case of rheumatism, and remember now that our rheumatism got better when we treated the tonsils locally and cleared out the pus.

How are the products of the foci of infection carried to the different organs? Both by the blood and lymphatics, and both by spread of bacteria and their toxins. Krebs and Schmidt found that in cases where no bacteria could be recovered from the infected muscles the disease was due the toxin from diseased teeth and tonsils. While on the other hand, Rosenow in cases of cholecystitis, appendicitis, peptic ulcer, and other lesions was able to recover from the diseased organs the same strain of bacteria as those cultured from diseased foci.

Among the foci of infection we first think of the teeth and tonsils but we know now that the sinuses of the head, the appendix, the urethra, the prostate, the bronchi are often the cause of infection in secondary sites. Alveolar abscess caused by infection with endameba, streptococcus and staphyloccocus and possibly others furnish us abundance of infection to be carried by the saliva to the stomach, to the tonsils and to the bronchi and lungs and absorbed into lymph nodes, also carried by the blood to all parts of the body.

The tonsils owing to their peculiar spongy structure are rich foci of growth of infection and on account of rich blood and lymph supply easily infect the whole body. The lymph nodes may be infected and remain as secondary foci after removal of tonsils; so do not say you were wrong in removing tonsils because you do not get immediate results. I saw one case of corneal ulcer which had refused to heal from a year's treatment, heal in a short time after Dr. B. S. Guyton removed the badly diseased tonsils.

I have also seen cases of pyelitis and cystitis clear up in a few weeks after removal of tonsils.

Abscessed teeth or apical disease of the teeth is one of the most universal foci found. I have seen these cases suffering with rheumatism or neuritis, malaise, headache, nausea, etc., relieved in forty-eight hours by removal of diseased teeth. One man came into my office a few weeks ago, aching "all over" as he expressed it, had been unable to work for a week. His mouth was a fright. Every tooth showed pyorrhea. I persuaded him to have his teeth extracted, which he did. In a week's time I saw him at hard manual labor and he told me that except for feeling weak from loss of blood he felt better the next day.

We have all seen cases of arthritis, endocarditis and other complications following neisserian infection both in the male and female. We have seen the general infection and pyelitis from stricture and diseased prostate and cervix.

The entire digestive tract is often deranged or possibly gastric and duodenal ulcers produced from infected appendices. Sanders and Warr report that 85% of cases duodenal ulcers surgically treated reveal an associated appendix or the appendix had been removed. The same authorities find that by x-ray study of the gastro-intestinal tract in cases of chronic appendicitis more than 90% had spastic colon with constipation.

Many cases of chronic gastritis and intestinal indigestion, peptic and duodenal ulcers are traceable to foci in the sinuses of the head. I have seen cases presenting every symptom of tuberculosis: fever, cough, rales, etc., when x-ray showed lungs to be negative, clear up on treatment of frontal sinuses and antrum. These foci also may cause many of the neuralgiae and rheumatism, headache, etc.

Many cases of diabetes and peptic and duodenal ulcers have been shown to be caused from infected sinuses. Many of these have cleared up when the sinuses were treated.

Different organisms show elective action for certain tissues. It has been noted that the same organism is likely to attack the gall bladder and myocardium. So when you find infected gall bladder watch out for his heart muscle. We just had a case with infected gall bladder and degeneration of heart muscle which I am sure would have shown a common focus of infection which doubtless was his teeth.

Osteomyelitis is another disease due to focal infection, usually by the tubercle bacillus. Injury or exposure to dampness is a predisposing cause; prepares the soil for the deposit of infection.

Geo. R. Minot shows that a general lymphadenitis resembling Hodgkin's disease may be caused by infection from diseased tonsils or sinuses. Hodgkin's disease may be caused by the same foci.

Many cases of urticaria, so called eczema, etc., are produced by absorption from various foci of infection.

I saw numerous cases of influenza in 1918 which I know must have been streptococcus hemolyticus infection, in which I found gall bladder and myocardium complications. These nearly all resulted in death.

Rosenow has shown that streptoccoci have a special affinity for the gall bladder. He cultured streptococci from a patient with cholecystitis and reproduced cholecystitis in animals by intravenous injection. This patient suffered from tonsilitis and streptococci from his tonsils were cultured and intravenously injected in animal producing cholecystitis. Typhoid bacilli and other germs will also cause cholecystitis.

Appendicitis is caused by hematogenous infection of the terminal blood vessels in the lymphoid tissue.

The French surgeons have especially noted the focal infection of the appendix from the tonsils, nose and jaws. The lymph nodes are often infected. Kretz believes that bacteria rapidly infiltrate through the lymph nodes into the blood streams. This may also cause local or general infection resulting in endocarditis, pericarditis, osteomyelitis, nephritis, cholecystitis as well as appendicitis.

Adrian has shown by comparison of the similar lymphoid tissue of the appendix and tonsil that the tonsils are more often the foci of infection for the appendix. He coined the term, "anginal appendicitis," to express this relation.

Rosenow has also reproduced appendicitis in animals by injecting cultures from tonsils and appendix and gets same results in each.

Many other infections could be shown, but this paper can not cover all this ground.

In conclusion let me urge that we seek out these foci of infection, when possible. Study the bacteria and the relation of infection from one foci to another and always seek to remove the cause and not cover up our work by drug therapy and let our patients drop into the hands of the charlatan and quacks.

PROSTATITIS: ITS ROLE IN FOCAL INFECTION.*

H. W. E. WALTHER, M. D.,

NEW ORLEANS.

The study of focal infections, and their etiologic relation to many bodily ailments, has attracted the attention of the profession for some time. Septic foci in teeth, tonsils and sinuses have received due consideration. Yet the profession generally has accorded comparatively little attention to the prostrate gland and seminal vesicles (we hardly discuss one without including the other) as a possible cause for the continuance of many intractable systemic complaints we are called upon to treat. The failure, on the part of the examiner, to in-

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*Read before the Mississippi State Medical Association, Biloxi, May 12-14, 1925.

clude these organs in his routine clinical study, has doomed many a man to prolonged and untold suffering. I have seen numbers of patients who have had every tooth pulled; tonsils, adenoids, appendix or gall-bladder removed, and still no relief. They will tell you that they have consulted a number of physicians but not one of them ever palpated the prostate gland. Yet in prostatitis the improvement noted by the patient following the first or second massage to the gland often gives them sufficient encouragement to request that the physician continue the treatment, despite the pain it frequently entails, until a cure of all symptoms is effected.

I do not wish to be misunderstood in this matter; far be it for me to deride the efforts of the dentist or otolaryngologist. Infections, in the mouth, throat or elsewhere demand attention. Miraculous cures are brought about daily where the true seat of a pyogenic focus is unearthed and removed. But in these modern times the failure routinely to examine the prostrate secretion in males suffering from obscure pain is inexcusable. I feel certain that were it carried out more systematically fewer teeth and tonsils would be needlessly sacrificed.

Cases of so-called "rheumatism," "sciatica," "gout," and "lumbago" remain the enigma of medicine. That the prostate and seminal vesicles furnish bacteria which perpetuate many of these conditions is being proven in an ever-increasing number of cases. It is not my purpose to leave an impression that all joint or muscular inflammations are due to infections in the genito-urinary tract. Nor should it be presupposed that all infections found in the lower urinary or sexual tract are of venereal origin. I mention this here because many laymen are under the impression that prostate trouble can originate only from a venereal infection. We know that nonspecific infections of the prostrate occur rather frequently and therefore no stigma need attach itself to one suffering from this malady. Besides the gonococcus, the bacteria commonly found in prostatitis are: the staphylococcus, the colon bacillus, the streptococcus, the micrococcus catarrhalis and the pneumococcus. So that prostatitis should be regarded simply as a septic focus to be grouped along with dental infections, tonsillitis, sinusitis, etc.

Osteoperiostitis, arthritis, arthralgia, (particularly of the lumbo-sacral joint), synovitis, myalgia, and some types of neuritis, are accountable largely to some focus of infection for their chronicity and failure to respond to the usual lines of treatment. That a large proportion of these conditions in the male is due to infected prostates and vesicles is attested to weekly, if we are to believe the reports in the literature. Some of the leading spirits in modern surgical thought have interested themselves in this problem and no less an authority than Eugene Fuller, of New York City, as far back as 1905, directed attention to the seminal vesicles and the important role they play in the etiology of Neisserian arthritis.

DIAGNOSIS.

Digital palpation of the prostate per rectum and the microscopic examination of the expressed secretion from the gland furnish the cardinal aids in arriving at a diagnosis. Both of these points require a little elaboration. First as regards the size of the prostate. In acute prostatis the index finger in the rectum will encounter a swollen, tender, feverish structure. But it is rarely at this stage that the physician in general practice sees the case. The patient usually comes under observation after the infection has reached the chronic period and at this time the gland need not be above the normal size. So that in investigating the prostate, as a possible source of focal infection, the size of the organ must be totally ignored.

It is by microscopic study of the secretion, and by this means alone, that accurate information is to be obtained. To massage a prostate, in order to express its contents into a medicine glass, is no complicated

procedure. Any physician possessed of an index finger can do it. With a little practice; after acquiring the proper "stroke," prostatic fluid can be obtained at will, and with little discomfort to the patient. A film of the fresh secretion is placed on a slide by means of a platinum loop, fixed with heat and stained with any of the analin dyes. Better still, transfer the secretion to a centrifugal tube and sediment for a few minutes in the centrifuge; pour off the supernatent fluid and with a loop place some of the precipitate on a slide and stain. This latter method of concentration, devised by Foster M. Johns, of New Orleans, aids materially in expediting the microscopic study. Prostate secretion normally harbors neither pus nor bacteria. Should the stained specimen therefore reveal either or both of these elements, in varying degree, our diagnosis is made. Right here it must be stated that one or even two negative findings are not conclusive evidence that prostatitis does not exist. Due to a long-standing infection, which has "sealed itself in," it may require several attempts at massage before the barriers are opened and the pus and bacteria liberated. This point should be borne in mind particularly in examinations of males who contemplate matrimony and desire to know if they are fit. The usual excursion of the index finger in carrying out the massage is a swing from the lateral extremity of the gland towards the mid-line, downwards and outwards. The prostate lies on the floor of the rectum and just within the anal sphincter. The seminal vesicles are located to the outer margins and above the prostate, in the same relative position as the two horns on a steer. Because of the difference in glandular structure, the vesicles are emptied differently from the prostate. Here the finger adopts a downward and zigzag movement in order more effectually to empty the sacs. If one wants to collect the prostatic and vesicular secretion separately, as is often desirable, the prostate is first massaged on a full bladder. After collecting the prostatic secretion, the patient is made to urinate (flushing out the urethra) and the vesicles are then emptied and this secretion collected in a seperate receptacle.

TREATMENT.

The management of prostatitis will be considered under five heads, viz: (a) hygienic; (b) local; (c) hyperemic; (d) intravenous; and (e) oral.

Of the hygienic admonitions to be observed by the patient the two that brook of no exceptions are the abstinence from sexual intercourse and spirituous liquors. Daily evacuations of the bowels must be maintained. In the absence of such exciting factors as fever and pain, outdoor exercise in moderation is to be encouraged. Massage of the gland is by far the most valuable single factor in getting rid of infection. Prostatic massage has never been a popular procedure with the profession outside of the urologists. Why this should be it is difficult to surmise. Unquestionably a certain proportion of the profession consider rectal palpation distasteful. That this attitude is changing, at least among the younger men, is encouraging. Realizing that so much depends upon thoroughness in arriving at a correct diagnosis, physicians today know that they cannot ignore the prostate and seminal vesicles as possible sources of trouble. The actual technique, described under diagonsis, will not be reiterated here. Suffice it to say, the clinician must massage with the head as well as with the finger. It is in truth a fine art but can be acquired by any one applying himself to the task. The pressure brought to bear on the prostatic lobes must not be severe enough to bring blood yet must be given with sufficient firmness to bring down the secretion. It is my custom to have the patient bend over an examing table holding a sterile medicine glass under the penis to catch any secretion expressed by massage. This secretion is submitted to microscopic study weekly in order to determine the progress made.

Treatments are given once, twice or thrice weekly depending upon the patient's reaction to treatment, the degree of swelling present and the severity of the infection. It must be clearly impressed upon the patient at his first visit that chronic prostatitis cannot be cured in a few treatments; that it may require months to rid the gland of its pus and bacteria. Only by the complete co-operation between patient and physician can results be obtained. As it is the rule in these cases to find a coexistant congestion and low grade infection in the bladder and deep urethra, instillations of a dram of two per cent silver nitrate solution or of a one per cent mercurochrome solution are given alternately following each massage. I have abandoned irrigations with potassium permanganate because I consider the two above named antiseptics superior.

The use of hyperemia in the treatment of inflamed and infected foci is not new. But the means of applying the heat, deep within the tissues, at temperature hitherto impossible, is of comparatively recent origin. By the aid of sedative diathermy, administered with any modern high frequency machine capable of delivering d'Arsonval current, thermo-therapy can be utilized in prostatitis with very gratifying results. It certainly increases the circulation within the gland and by so doing favors resorption of toxic material. Briefly the technique consists of placing a specially constructed electrode in the rectum against the prostrate and an ineffectual electrode on the suprapubic region; the electrodes being so arranged as to center the maxium thermal point directly in the gland. Diathermy can be given as often as considered necessary (usually every four days) each treatment lasting from 20 to 40 minutes.

The use of mercurchrome intravenously in the treatment of systemic infection has gained wide popularity. And whereas it fails to benefit a certain proportion of cases (about 33 per cent) it should be borne in mind as a possible aid in treating the more refractive types of prostatitis. Usually but three injections are given by us at four day intervals. If no results accrue from these injections, we do not consider it worth while to continue. From 2 c. c. to 10 c. c. of a 1 per cent freshly prepared and sterilized aqueous solution is employed. One begins with the small dose and then increase the amount of solution according to the reaction experienced, the results obtained, and the tolerance of the individual.

Hexylresorcinol is the newest of the internal urinary antiseptics. Its final place in urology still remains indeterminate. This much can be said for it at this time. It possesses the power of inhibiting bacterial growth in the urine of certain cases, while in others it appears to be innocuous. Our experience with hexylresorcinol so far has failed to arouse enthusiasm. Neutral acriflavine in ½ grain enteric coated tablets or urotropin in 15 grain doses still have many advocates and should be tried.

CONCLUSIONS.

1. The prostate and seminal vesicles play an important role in considering focal infections in the male and merit more serious consideration at the hands of the profession than has been accorded them so far.

2. Correctly to diagnose prostatitis it is imperative that microscopic studies of the expressed secretion be made. The size of the gland, as elicited by digital palpation per rectum, is often misleading as regards the true pathology existant.

3. Massage of the gland, when regularly and efficiently performed, is the treatment pre-eminent. As adjuncts, diathermy and intravenous antiseptics have proven of value in certain refractive cases.

FOCAL INFECTION IN THE DENTAL TISSUES.*

J. N. C. MOFFAT, D. D. S.,

CLARKSDALE, MISS.

I want to express my sincere appreciation of the privilege of appearing on your program. I do not consider it a personal compliment but I am indeed appreciative of the honor conferred upon the dental profession.

When I began the practice of dentistry over twenty years ago, the function of the dentist was to relieve pain, promote comfort and employ a system of mechanics for esthetic purposes.

I was not a dentist from choice and the goal of my ambition was to be a practitioner of medicine and surgery. Feeling as I did, I have watched with unusual interest the advances, step by step, of the important significance of dental infection in the prevention and cure of systemic disorders. Dr. Chas. Mayo, several yeors ago, made the statement that the next great advance in medicine and surgery would have to be made by the dental profession, and asked if the dentists would be equal to it.

The dental profession has accepted the challenge and by scientific research and investigation, backed by clinical evidence, realizes that infection in the dental tissues is a potent factor in systemic disease.

We believe that your success is largely limited without our help and we realize that our activity is largely limited without your co-operation. It seems to me that lack of co-operation can be attributed to one of two propositions—perhaps both—ignorance or indifference.

"Remove the cause" is about the only theory that has stood the test of time without being bombarded or changed and it looks as if some of us ignore that too often.

Many years ago some raised the argument that the connection between mouth infection and systemic disturbances was too hypothetical and that they were not related in cause and effect but were coincidental. The mere fact that there is a great prevalance of mouth disease without associate systemic involvement is no argument The same is true of syphilis, gonorrhea and tubercular immunity—still no one doubts the significance of these infections.

It would be silly to read a paper on the Christian religion to a man that did not even believe in God. If there is anyone present that attaches little importance to mouth conditions and general symptoms, I want you to stop up your ears until I finish. It is not my object to teach you something you don't already know but to stimulate interest and urge more helpful co-operation.

Dr. Chas. Mayo made the statement several years ago that people in the future would not die of plagues as in time past but would die of focal infection. He made the statement also that 90% of all focal infection is above the collar and that 72% of that 90% is found in the dental tissues. A large per cent of infected tonsils is a secondary manifestation to mouth disease. If this be true, where does your responsibility come in as the true guardians of health? It is to you that suffering humanity stretches forth its hand.

You know better than the dental profession that pathological conditions do not bob up without a cause. You know that when a patient presents himself with a case of arthritis, neuritis, endocarditis and dozens of other conditions of inflammation, that focal infection is the cause.

If you notice mosquitoes in a house that is screened, you know they are getting in somewhere. If there is some place that you know affords the best opportunity for their entrance, it is certainly reasonable to get rid of the openings at that place first. The mouth unquestionably affords the best opportunity for the entrance of germs into

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the system so it seems that the logical thing for you to do in treating your patients is to see that the mouth is attended to and of course the dental surgeon is the only man that can intelligently handle it.

I saw a case at the Mayo clinic that I want to report. The patient was a girl 18 years old with a severe case of iritis. After a thorough examination, including, of course, x-rays of the mouth, in the absence of all other probable causes, two central incisors were suspected as the cause of the trouble. These teeth were extracted. Serum made from canals of one of the teeth was injected into a guinea pig. The pig developed the same lesion in its eye that the girl had and the girl was dismissed within a short time entirely relieved without further treatment.

Rosenow, in his reseach work, has produced, in pigs and rabbits, ulcer of the stomach, heart lesions, joint disease and dozens of other pathological conditions corresponding to lesions in patients, by injection of serum made from dental focal infection of these patients.

Dr. Cotton, medical director of the New Jersey State Hospital, made this statement, "By recognizing the fact that mental diseases may be the result of oral infection and toxemic poisoning due to this infection, we have been able to restore many patients who with our former methods of treatment became chronic patients and remained in the hospital until the time of their death. Thus we have been able to discharge 78% of the patients admitted to the hospital within the last nine months, whereas, for a period of ten years, the proportion of discharges to admission was only 43%."

Langsworth, in his study of cases at the University of California hospital, found chronic focal infection in 84% of ulcer patients, 66% of sub-acute cases of arthritis, 73% of the chronic cases of arthritis, and in 100% of gall bladder cases. He stated that the acute and sub-acute cases responded well after the removal of the foci, even to the point of absolute cure. In many of the chronic cases the patients had less pain and no further progress of the disease.

Duke, in tabulating 1000 medical cases in which the patients suffered from some form of chronic disease, found a marked degree of oral sepsis in 66%.

Thoma, in a similar group of cases at the Robert Brigham Hospital in Boston, found alveolar abscesses in 88%.

Crous found alveolar abscesses in 44% in a series of 124 patients with miscellaneous disease.

Potter of Columbia University, in the New York Medical Journal of February, 1917, gives a list of 31 diseases to which dental sepsis contributes. I think it is reasonably possible for mouth sepsis to influence the progress and prognosis of almost every disease, and undoubtedly it does in thousands of cases where mouth disease receives absolutely no consideration as a causative factor.

I was operated on in 1919 for osteomyelitis of the femur. I laid in the hospital for 30 days and was discharged at that time with a copious discharge of pus which persisted for six months. There was absolutely no examination made of me other than the examination of the local condition. At the expiration of 6 months, I was examined from head to foot in every way. The only focus of infection or probable cause of my condition was located at the root of a non-vital front tooth. The tooth was extracted and my leg opened up and cleaned again. I was in the hospital for only 4 days, the incision healed without further drainage and I have been perfectly well since that time.

I have had dozens of patients suffering from neuritis and arthritis and the foci of infection was unmistakably pyorrhea.

Treatment would give temporary relief from pyorrhea and relief from the general symptoms would follow. In many instances patients would have a return of pain and mouth examination would reveal a return of pyorrhea. Treatment would be given again for pyorrhea and same results would follow. I have seen this occur at intervals for a period of ten years.

I know of many cases where acute symptoms would persist after surgical interference in deep seated pathology until certain focal infection in the dental tissues were removed.

You can't tell where the primary lesion is in a secondary manifestation. Is it fair, practical or scientific then, when dealing with a condition that may be caused from septic infection, to ignore mouth conditions?

There was a school teacher in our city that had a slight rise of temperature every day for over five weeks. She was out of school, lost weight and continued to go down. Her parents insisted upon her giving up her position. Patient was brought to my office and x-ray examination showed a large rarefied area at the apex of an upper lateral incisor. This tooth was extracted and further examination revealed a large pocket and destruction of bone. This was on Friday. Patient went back to her school the following Monday. Had no more fever and gained about 25 pounds in less than two months.

There was a patient referred to me suffering from neuritis. X-ray examination revealed some blind apical abscesses and severe infection from pyorrhea. I removed several of the worst teeth. Patient received temporary relief and did not return for further treatment. He remained fairly well for many months and then had what was diagnosed as a nervous breakdown, and was finally sent to one of our state institutions hopelessly insane. Sometime later all of his teeth were extracted and he is at home with his family perfectly well. This patient is about 45 years old.

Now, gentlemen, I could cite cases to you for hours probably, giving clinical results which prove beyond a shadow of a doubt the direct connection between focal infection in the dental tissues and systemic disease.

I contend that many patients are suffering today because some of our leading physicians and diagnosticians are ignoring oral sepsis. I know it is a questionable policy for me to say this. I realize also that a large majority of dental infection is due to improper skill, faulty technic and careless indifference of the dentist. We deserve and should have a severe rebuke from you but I also think it is proper for us to rebuke those of your profession who are not giving our field due consideration.

This is being done, not by the so-called country doctor, or slip shod practitioner, but by some who rank among the highest, and in closing this paper, I want to cite two especially interesting cases that prove my contention:

Case No. 1. Married lady about 25. She lost control of the lid of the right eye. It drooped as it would in winking. Vision in that eye was impaired to such an extent that patient could not read; could not even drive a car. She went to one of the leading specialists in the South—a man with a national reputation and one whom all of you know. He made every examination that he wanted to. He had his associate to remove patient's tonsils stating that her condition was due to focal infection. Patient was not relieved, and after recovering from operation suggested that her teeth be x-rayed. This specialist looked at her teeth and told her she had as nice looking teeth as he ever saw and said that an x-ray of her mouth would be a useless expense.

Patient returned home and several months later came to my office. X-ray of her mouth revealed a granuloma at the apex of each root of a lower six year molars and two impacted lower third molars that did not show in the mouth. There was a dark area around the crowns of impacted teeth. The infected molar and impacted teeth were removed. That has been over 8 months ago. I

saw the patient a few days ago. She has had no return of the trouble. Appearance is normal, eye sight normal and of course, she is delighted.

Case No. 2. Widow 58 years old. Began having hemorrhages from the kidney. Called one of our local physicians and after treatment for some time with no improvement, at the suggestion of her physician, she went to one of our cities and consulted a diagnostician, who is known as well as any man in the South. He examined her everywhere except her mouth. The x-ray specialist associated with him made numbers of x-rays of her kidneys and other internal organs. Her tonsils were examined. She was turned over to the leading kidney specialist of the city who made many cystoscopic examinations. She returned to the diagnostician and was told that he could not locate the cause of her trouble. Was instructed to go home and stay in bed. Was put on a diet. She was also advised not to let anyone do a surgical operation.

Patient returned to Clarksdale.....Grew worse. Lost weight. Complexion bad; nails discolored and badly depressed.

She made her plans to go to Mayo Clinic. Was brought to my office. X-ray revealed 9 devitalized teeth with blind abscesses. Pyorrhea in worst form and a general septic condition. I consulted with her local physician and he said that, of course, her teeth would have to come out but he doubted beneficial results so far as patient's kidneys were concerned.

I began very cautiously the extraction. At the end of the 15th day she came to my office. All of the teeth had been extracted except three or four. She came in smiling, saying, "Doctor, my urine was clear this morning for the first time in over three months."

That has been nearly a year ago. She has had no further treatment. She says she is enjoying better health than she has had for 15 years. Her complexion is good. She has gained considerable weight, feels good and has had no other treatment.

You will please pardon the lengthy details of these two last cases. Both of them are prominent people and the last case especially is well known to the Clarksdale physicians.

I want to thank you again for the privilege of being with you, and want to apologize for the persistent use of the personal pronoun—I had to give my own observation, but hundreds of dentists have had similar experiences.

I will appreciate a free discussion of this subject and I shall gladly attempt to answer any questions along this line.

DISCUSSION.

SYMPOSIUM BY DRS. EASON, WALTHER AND MOFFAT.

Dr. A. M. Harrelson (Stringer): The thing that needs to be emphasized most is careful examination. That seems to be one of the things that was stressed by each one of the essayists and it should be emphasized and practiced by each one of us. We learn a great deal about these things by experience and one of the greatest experiences of my life as a professional man happened about 15 years ago and it made me very, very careful ever since. I was called late one afternoon to see a sick child. It was a very cold evening and the grandmother of the child was sitting by the fire with the baby wrapped in a large blanket and its feet uncovered towards the fire. The room was a little dark, but still I could see pretty well and the first thing I noticed was a large abscess on the baby's foot, which was just about ready to burst. I took out my lance and opened it, and then I carefully turned back the cover that the grandmother had the baby wrapped in and when I got in there I found the baby had been dead for about 30 minutes. That taught me to make an examination before I did an operation. I have been very careful ever since and I have not from that day to this operated on another dead baby.

Dr. H. R. Hays (Jackson): I have nothing to add to what has been so ably said, but I want to express my appreciation for these excellent papers, particularly the paper of Doctor Walther. It brought out the focal infections related to the prostate. So many times in the clinic work in this state we have seen these people come in and just a massage two or three times would transform the patient from a down-and-outer, into a man who was ready to go out and earn his living. Nor do I blame the general practitioner because I practiced medicine myself about ten years, and I do not remember in that time of palpating a single prostate gland, but in those days we did not have the criteria that we have today in our medical societies, we did not have these things discussed, and I hope this paper in particular will impress upon the general practitioners the importance of examining these prostate glands and massaging them.

In regard to focal infection, I remember one case I had, a Y. M. C. A. secretary who was in camp at Deer Island. He had been going in swimming with the boys and had been eating in camp—we had a summer camp over there. He

had been playing on the beech and had skinned his knee. He did not tell me anything about it, but he gradually began to develop a fever, a little higher every day, his tongue got long and pointed, and I thought there was a little petechia on his abdomen, so I took him as a case of typhoid fever and put him in the hospital. He had not called attention to this wound, so he was entered as a probable case of typhoid, but when they went all over him they found this wound, treated it, and when it was cleaned up his temperature went down and he made a rapid recovery. That emphasized to me again that we should examine our patients very thoroughly.

Dr. J. J. McCauley (Sarah): I was very much impressed by Doctor Moffat's paper, because I have a couple of cases that I would like to report which may possibly impress this upon the general practitioner a little more.

In 1919 I was at the Chicago Polyclinic and one afternoon a patient was presented to our class. We were divided up into groups of four or five so we could examine this man who had been in every clinic in the United States. He was about 32, fairly well nourished, and he had had a little afternoon temperature for three years, but no one had ever been able to locate the cause. He had his record and it showed anywhere from 99½ to 100 temperature in the afternoon. Everybody went over him, but no one could locate the trouble. Fortunately there was a dentist in the crowd who had not been asked to go over the patient, so he asked permission to observe him for two or three days. The dentist took him and had an x-ray made and found a small dark spot at the root of one tooth. His mouth looked perfectly clear and he seemed to have a perfect set of teeth. The dentist insisted upon having the tooth removed, it was extracted and the sixth day after the tooth was removed the patient had a normal temperature. I have not heard from him since.

Another case was a woman about 84 years old. I was called to see her two years ago. She was brought down on a stretcher from a hospital in Flint, Michigan. She was so emaciated and her heart beats were so fast that they could not be counted. The doctor who had sent her home wrote a note stating that she was getting about 2 grains of codine and 15 drops of digitalis a day. I looked at this old lady for a week or ten days without making any diagnosis. She had a complete upper plate, and the lower teeth were all extracted except four in front. These teeth were loose so I called in a local dentist and he took them out, and in 60 days after that her heart beats had quieted down to almost normal and she returned to Danville, Illinois. I had a letter from her last week and she stated she had gained 24 pounds and was able to walk three quarters of a mile and was feeling very well indeed.

Dr. S. E. Eason: I appreciate what Doctor Moffat said about my paper. I could not have a much higher compliment than that, because dentists think they know all there is to know about focal infection. However, I have learned a good deal of what I know about focal infection from being associated with dentists. I take many of my cases to them for examination, where I fail to find the cause.

The study of the focal infections to be thorough must be carried out by the general practitioner; because as has been shown today—Doctor Moffat shows what should be done with the teeth, and Doctor Hays and Doctor Walther tells us about the prostate, and the general practitioner must work between the two. The eye, ear, nose and throat man sees it from the frontal sinuses and the tonsils, and it is up to us to work the whole thing together, because the general practitioner really does cover the whole body, and we are the only people who do.

One thing I left out was epilepsy. In 1917, I was with Doctor C. A. Reed, who thought he had found a cure for epilepsy, and that was, an ileosigmoidostomy, completely isolating the colon above the sigmoid. I saw x-rays of a number of those cases and every one showed what he claimed was there before the operation, and in a great many of them two years after had not had a return of the epilepsy. The case I had, however, was not benefited at all from the treatment, but he had one of the worst mouths I ever saw, and every case of epilepsy I have ever seen since had the same kind of mouth. If a diseased mouth can cause epilepsy, diseased tonsils and gall bladder may cause it. We must go over all these things in order to find the cause.

Dr. H. W. E. Walther (closing): Doctor Eason strikes the keynote of the whole situation. If, in this symposium, you had had one man representing each branch of medicine, and if the audience would then correlate the facts and store them away where they could be drawn upon when needed, we would have an ideal state in which to practice medicine. In other words, we frequently have multiple foci of infection and every possible source should be investigated before we rest satisfied.

I cannot quite agree with Doctor Eason that the urologist only sees the prostate. The sloppy man might, but not the real urologist; and I even go so far as to believe the dentist has a farther vision than the teeth because I have had cases referred to me from dentists, as in turn I have

referred cases to dentists, and we know that dentists refer cases to the surgeon, to the otologist, and so forth. Team-work is what we must have, to find these multiple foci of infection. Treating the prostate, even though it be infected, will not cure the individual if he has bad teeth; both areas must be attacked.

Chronic appendicitis will be cured by the removal of the appendix, but the *patient* will not be cured if he has a bad gall-bladder, too. Both foci must be attended to. I think that is the generally recognized state of affairs today. Doctor Eason told us of one case that had bad teeth and also had bacteria in the urine. The infected teeth removed the cause that brought the patient to the doctor, but did it remove the bacteria in the urine? Might there not be an infection of the urinary tract, too, and might not that patient wind up with a chronic infection of the kidney which may do great damage?

Doctor Moffat brought out clearly my position regarding multiple foci of infection in his case report of hemorrhagic kidney due to a focus in the teeth.

I appreciate what Doctor Hays said in regard to the effect of massage of the prostate. I do not want to leave the impression that every ailment in a man is due to his prostate; that was not the purpose of the paper. It was simply to draw your attention to the fact that prostatitis is commonly prevalent and that we should be on the lookout for it.

Dr. J. N. C. Moffat (closing): I do not think there is any question that we all agree that it is necessary to remove all foci of infection. It is unreasonable to think that if you have a sore toe, bad tonsils, or a bad prostate, that you would expect to get good results simply by removing the teeth. I think this discussion is calculated to do some good. I believe the susceptibility to infection, the number of bacteria and the amount of area involved, is greatly in favor of the field of the dentist. We have 32 teeth to contend with, together with the tissue surrounding each tooth and then the deeper structures also. All statistics are based on percentages, and figuring it from that point of view, I think it is well to take into consideration the dentist's field first.

I want to express my appreciation of the discussions given to my paper and also my pleasure in being with you. I have ridden about a thousand miles and lost five days out of my office, but I have enjoyed the papers and the discussions along other lines, and I think it will do me a great deal of good. I hope that my few remarks may do you some good.

X-RAY DIAGNOSIS OF COLONIC LESIONS*

C. P. RUTLEDGE, M. D.,
SHREVEPORT, LA.

In X-ray examination of the colon the opaque meal, the opaque enema or better still a combination of the two may be used. Each method has its place and advocates; however, if one only is to be used, the opaque enema would be my choice.

When the combination method is used, my procedure is as follows:

Patient is instructed to report to X-ray laboratory without having taken purgative within forty-eight hours. The opaque meal, which consists of three ounces of

Fig. 1. Case 1.—Colon filled with opaque enema showing an incompetent ileo-cecal valve with filling of several feet of small intestine.

barium sulphate thoroughly mixed with twelve to sixteen ounces of buttermilk, is now given by mouth. No examination is made at this time but patient is allowed to pursue his normal activities and eat his meals at regular intervals, but must abstain from all purgation or enema. Examination is begun six hours after ingestion of meal at which time it is usually seen in terminal ileum, cecum and ascending colon. Patient is examined, by aid of

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fluoroscope and films, in horizontal, vertical and other positions, the examiner resorting to palpation to detect points of fixation, tenderness, etc.

Following this initial examination, observation and films are made at intervals of twenty-four hours, or oftener if indicated, for a period of from forty-eight to one hundred forty-four hours, the termination of examination being limited to a certain extent by the degree of stasis.

Fig. 2. Case 2.—Colon 72 hours after ingestion of Barium meal showing retention of practically all of meal in cecum, ascending and transverse colon, with marked coloptosis.

Fig. 3. Case 2.—Colon filled with opaque enema, showing spastic iliac colon.

The opaque meal is especially indicated in suspected chronic appendicitis, diverticulitis and diverticulosis, caricinoma (more particularly when there is considerable obstruction to flow of opaque enema preventing clysma from filling colon proximal to lesion), tuberculosis, atony, stasis, ptosis and colitis.

The opaque enema will usually give most of the information obtained from the use of the opaque meal and much more, for in its use we can fill colon in its entirety,

Fig. 4. Case 3.—Marked dilatation of cecum and proximal ½ of transverse colon, due to adhesion of dependent portion of transverse colon low down in the left side of pelvis. Relieved by operation.

Fig. 5. Case 4.—Kinking of iliac colon following herniotomy. Spastic descending colon.

whereas with meal it is filled in sections. With this method of examination the patient should have special preparation. My

practice is to have him take two ounces of castor oil about nine or ten o'clock on the night previous to examination. On following morning colon is thoroughly cleansed by soap sud or soda enema, patient reporting for X-ray examination one hour after enema. At the time of examination the patient is stripped and operating gown put on, being fastened in back with strings. He then lies on his back on fluoroscopic table, is covered with sheet and gown pulled up under armpits. The abdomen is first examinel for possible stones, diverticula or foreign bodies. The opaque enema consisting of six ounces of

Fig. 6. Case 5.—Marked dilatation of rectum and sigmoid. (Mega-colon)

barium sulphate thoroughly mixed with two quarts of buttermilk, at body temperature, is now poured into enema can. The enema tube is allowed to fill forcing out all air; the tip, which is slightly larger than main tube, is now greased with KY jelly or vaseline and inserted in anus past the sphincters which clamp down over it easily retaining tube in place. The opaque enema is allowed to flow slowly through tube, the rapidity of flow being easily regulated by raising or lowering the can. The ampulla fills first, then the sigmoid and iliac colon, which areas are often narrowed, spastic and tender, especially in many cases of chronic constipation. This is also the most frequent site for diverticulitis, oftentimes diagnosed by the clinician as left sided appendicitis and sometimes very easily confused with carcinoma, as I will later illustrate with slides. The descending colon is next easily outlined. This also is frequently narrowed, spastic and tender in many constipated individuals. Often in patients with thin abdominal walls this portion of colon can be easily palpated throughout its extent. The splenic flexure is as a rule fixed well up under ribs and cannot be palpated; however, in cases of ptosis it is often seen well below crest of ilium. The transverse colon is suspended very much like a hammock across abdomen, the more

Fig. 7. Case 6.—Diverticulosis of colon. Plate made 72 hours after giving of barium meal, showing involvement from head of cecum to anus.

or less fixed points being the splenic and hepatic flexures, the dependent portion often lies very low in pelvis where it is frequently fixed by adhesions following abdominal operations. The hepatic flexure is as a rule slightly lower and more mobile than the splenic flexure, and often in extreme degrees of ptosis lies rather low down in pelvis. Normally the head of cecum is freely movable, but about fifty per cent of those observed by me are either slightly or rather firmly fixed in right lower quadrant by inflammatory adhesions from chronic appendicitis, or other lesions in this area.

The importance of the competency or incompetency of the ileo-cecal valve is a

very much mooted question, and the subject of much disagreement. My experience has been that it is incompetent in nearly all patients suffering from colonic stasis, which is not true of the apparently normal individual. Usually it is incompetent in chronic appendicitis and those cases in which head of cecum is fixed either following operation or from other causes.

For the past three or four years I have been especially interested in the examination of those patients who give little more than the usual history of chronic constipation, and have gone from pillar to post having taken the entire list of purgatives, laxatives, osteopathy, etc., for relief, without benefit. Very few of these unfortunates had received a thorough examination of the colon, although oftentimes they had consulted some of our very best clinicians and had received so-called gastro-intestinal X-Ray examination, which consisted usually of fluoroscopic and plate study of stomach and duodenum, or maybe thirty-six and fortyeight hour observations of opaque meal. It has been my privilege to examine considerably more than a thousand of these cases, in the majority of them using the combination of the two methods, at the same time examining stomach and duodenum.

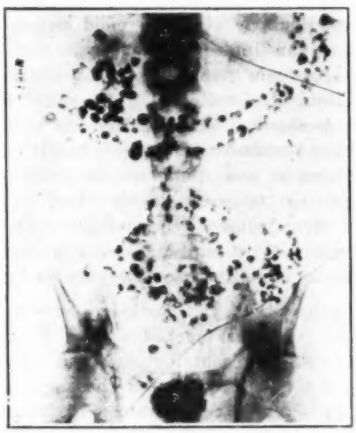

Fig. 8. Case 6.—Diverticulosis of colon—120 hours after giving of barium meal.

Numbers of these cases showed colonic stasis of extreme degree, others, gastro-enteroptosis with greater part of stomach and both flexures rather low down in pelvis with atonic type of colon; still others showed markedly spastic colons with diverticula, while many had definite constrictions from adhesive bands, causing marked dilations of colon. Appropriate treatment, sometimes surgical and sometimes medical, was given, and a large percentage of these unfortunates were relieved and hundreds entirely cured.

My experience convinces me that many conditions diagnosed clinically as gastric ulcer, diseased gall bladder, or other upper gastro-intestinal pathology, are, with thorough X-ray study, demonstrated to be colonic lesions. I believe that many more lesions go undiagnosed in the colon than in the upper gastro-intestinal tract. The X-ray probably is of greatest value in determining the method of treatment of colonic lesions, many of which are surgical, while fully as many are subjects for the internest.

Fig. 9. Case 6.—Diverticulosis of colon—144 hours after giving of barium meal. Patient took 2 ounces of Castor Oil 12 hours, and enema 2 hours previous to making this film.

DISCUSSION.

Dr. J. E. Knighton (Shreveport): I want to call your attention to one condition so beautifully illustrated by the lantern slides—the condition of diverticulitis, a condition which so frequently follows a colitis of long standing. What I want to

emphasize is that we must not depend on getting this condition brought out as the doctor has illustrated here by simply making an examination of the patient's colon by a barium enema. You cannot depend on it. Sometimes you will get it, but many times not. And do not accept this on a single examination of the patient in which you suspect such a condition after a barium enema. In many of these cases after a barium meal has been permitted to pass down into the colon, if examination is made 24 to 48 or 72 hours after the barium meal has been injected, and in some instances even after the bowels have apparently emptied, this condition is shown beautifully. I believe in many instances serious mistakes have been made by contenting ourselves with a barium enema when we suspect the condition which is shown on these plates.

Dr. Edgar L. Sanderson (Shreveport): There is not much to be said by a surgeon regarding an x-ray demonstration, because we do not know a great deal about the interpretation of x-ray plates,

Fig. 10. Case 6.—Diverticulosis of colon—Colon as seen with barium enema (Clysma).

and my experience has been that a barium enema is misleading, especialy in regard to dilatation of the lower part of the bowels or sigmoid. You can easily understand that in giving an opaque enema you are going against the natural resistance of the bowels, and you have a solution that may make you think you have a dilatation of the sigmoids when really what you have is a normal sigmoid. I think the flouroscope is more satisfactory than plates.

Dr. Sidney K. Simon (New Orleans): I simply want to say a word in commendation of this very excellent paper of Dr. Rutledge, and especially the beautiful plates of diverticulosis of the colon. I think it is the very best plate I have ever seen either in a lantern slide or in any text book, showing the very marked effects of a diverticulosis affecting the large bowel. That plate demonstrates the great value of the barium enema as contrasted with the meal by mouth. The meal by mouth will never show the fine variations in pathology of the colon that the barium enema undoubtedly does.

A diagnosis of diverticulosis alone is quite simple, particularly from the medical standpoint. The surgeons are interested in diverticulosis of the colon when the lesion is most marked, producing very definite symptoms of acute inflammation. Some of the cases of diverticulosis affecting particularly the sigmoid and descending colon simulate very closely the acute inflammatory condition of acute appendicitis and sometimes there are most pregnant clinical conditions. But from a medical standpoint the medical man sees these cases with indefinable pain and general discomfort in the abdomen which often are hard to interpret, but which in many instances we find can be traced to very marked diverticulosis, particularly of the sigmoid and colon. In those cases an interesting point is the marked intestinal toxemia that attends the diverticulosis of the colon. In spite of all your therapy, whether mechanical or irritation or the buttermilk theory—whatever it might be—in spite of every means at our command at present to relieve intestinal toxemia, yet in the particular marked diverticulosis the results are most unfavorable and it really presents a very difficult problem from the medical viewpoint.

The picture that Dr. Rutledge showed of diverticulosis in such marked degree is certainly a most important contribution and one that should focus our attention on the importance of diverticulosis of the colon from a medical as well as a surgical standpoint, and the great importance of barium enemas in bringing out not only this condition but many others which the meal by mouth fails to do.

Dr. A. E. Fossier (New Orleans): I want to speak of one phase of this question only, and that is the danger sometimes of giving oil, especially in cases where we have spasms of the bowel. Oil will increase these spasms. I have in mind a recent case which illustrated the danger of making the wrong diagnosis by giving oil before giving the barium meal. I had a young lady last summer who had been sick for some fifteen years; she had marked fistula and also marked colitis. The rectal condition was absolutely raw, although there were no ulcerations. Then, of course, she had all the other disturbances of nutrition and also gastric disturbances. She did fairly well, but she finally went to

Chicago to see one of their very best surgeons. She went through the routine examination, was given oil the night before and then an X-ray examination made. The first plate was made and the stomach did not empty at all. Then a flouroscopic examination was made and an x-ray and the surgeon jumped at the conclusion that there was an organic obstruction of the duodenum that demanded immediate operation. The patient at this time had no difficulty. No doubt there was spasm due to the rectal condition which was increased by the giving of the oil, but the patient was not operated. They wired to me for advice and I advised against operation. She came back and in the last six months has gained over 18 pounds. Dr. Granger made a thorough examination of the gastro-intestinal tract and instead of having retention the stomach emptied quicker than it should. I mention this as a matter of precaution, that we shall be careful about spasms when we give oil. Frequently instead of giving oil we have to give belladonna in order to relieve the spasms that may exist.

Dr. S. C. Barrow (Shreveport): I would like to emphasize what Dr. Knighton brought out, and to say that a few years ago a patient of mine lost his life because the diagnosis we made by a barium meal by mouth showed a diverticulitis of the descending colon which was not demonstrated at other clinics by the opaque enema. He was treated by enemas, dilatation and so forth, thinking it was colitis, but perforation took place and the post-mortem showed that he had a diverticulitis. At two clinics, both larger than ours, opaque enemas were used and the diverticuli were not demonstrated; but the barium meal by mouth showed them very typically.

Dr. C. P. Rutledge (closing): In reply to Dr. Sanderson'scriticism of dilatation of the sigmoid by opaque enema, if the enema is given as it should be this will not happen. If the enema is started with can, low and given very slowly under palpation and massage, you will not have the dilatations unless they are there. If you do have them, they are due to spasms from above, and you can lower the can and allow the sigmoid to fill again, then raise it again and you will get a correct outline.

In regard to diverticulosis, I favor a combination of the two methods. I think by the combination of the two you will miss less cases than if you adhere to one method alone. That is also true after giving an opaque enema. Sometimes you miss a diverticulum in the sigmoid. If you will lower the can and allow it to empty and then refill, very often it will show a diverticulum that you otherwise might miss.

In regard to giving castor oil; it is not given where we give an opaque meal, but it is given before giving an opaque enema. If we want to study the colon and stomach with an opaque meal, we do not give purgation within 48 hours. It increases the motility of the stomach when you do not want it.

SOME DIFFICULTIES IN THE DIAGNOSIS OF EARLY PREGNANCY FROM THE SURGEONS' VIEWPOINT.*

J. A. CRISLER, M. D.,

MEMPHIS, TENN.

No more perplexing problem presents itself to the surgeon than the diagnosis of pregnancy. Like disease conditions its recognition is most difficult in the early stages when there is no pathognomonic sign to guide us. Unfortunately it is just at this period, that is, in the first three months, that the gynecological surgeon is usually confronted with the problem.

Unlike the obstetrician the surgeon is called upon to exclude normal pregnancy before undertaking operation for other abdominal and pelvic conditions. Many times he is not sure of his diagnosis until after the abdomen is opened and occasionally an unrecognized normal pregnancy is found. Those among you who have not had this humiliating experience, may recall instances when the reputation of the patient hinged upon your diagnosis of pregnancy which you strongly suspected. The reputation of the physician is always at stake, for nothing reflects more unfavorably on his integrity than mistakes in the diagnosis of this condition. Embarrassing as it is, we must frequently explain our inability to make an early diagnosis and refuse to give a positive opinion.

In establishing the diagnosis of pregnancy, the history of the case is important

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chiefly in revealing the patient's attitude toward pregnancy. Its accuracy is in proportion to the patient's truthfulness and intelligence. Too much importance cannot be attached to the symptoms of pregnancy for other conditions may produce them and menstruation may appear after commencement of gestation. I recall one patient with a tubo-ovarian pregnancy of five or six months' duration, who gave no history of amenorrhoea nor of any irregularity of menstruation. Her only complaint was pain in the right lower quadrant of the abdomen. Pelvic examination revealed a firm, rounded mass which was closely attached to the uterus and which had an irregular surface. A preoperative diagnosis of fibroids was made. I have here an x-ray picture of the specimen made after its removal. Doubtless the fetal skeleton could have been shown on the x-ray film, but the history was not even suggestive of the real condition.

The positive signs of pregnancy are objective signs referable to the fetus, but they do not as a rule become available until after the fifth month. The probable signs are referable to changes in the uterus and cervix, but these changes may be produced by other conditions, and in very obese patients, the size and consistency of the uterus cannot be accurately determined by bi-manual palpation. Examination under anesthesia is helpful in certain cases, but here again the information obtained is not positive evidence.

Owing to the uncertainty of the information obtained from the history and physical examination, research workers have, for years, tried to develop an accurate laboratory test for pregnancy. As the result of their efforts, we have today several tests, the majority of which are of little practical value.

Abderhalden's reaction which is based on the use of ferments for placental proteins, is too unreliable to be of any practical use as a diagnostic sign of early pregnancy.

It has long been known that glycosuria is a frequent occurrence in pregnancy, and from this knowledge, two tests have been developed; 1st, The glucose ingestion test; 2nd, The Phloridzin test. The principle of both lies in the fact that glycosuria is more easily produced in the pregnant than in the normal woman. In the former test glycosuria is brought about by the ingestion of glucose. In the latter by the administration of Phloridzin, a drug which has been used for the production of diabetes in the experimental animals. Both tests have some draw backs and various observers report different percentages of success, but the tests offer the possibility of increasing usefulness since they are simple, safe and fairly accurate. In general it may be stated that their negative results have been found to be more accurate than the positive ones; that is, the tests are more valuable in excluding pregnancy than in diagnosing it.

Roentgen ray as an aid in the diagnosis of late pregnancy has been long employed. The exact stage at which this method becomes available is disputed by various observers, but in only a small percentage of cases can the fetal skeleton be shown before five months. More recently in x-ray studies of pneumoperitoneum, the early gravid uterus has been clearly shown. However, considerable experience is necessary to acquire the proper skill in making and interpreting the rontgenograms, and the introduction of air into the peritoneal cavity is to the patient a somewhat formidable procedure, not without discomfort and some element of danger. Its use is limited to selected cases, and its value as a routine procedure is fairly estimated by Stein and Arens, who, after study of a large series of cases conclude: "The uterus in early pregnancy can be demonstrated by pneumoperitoneum and is quite typical of gestation; but only when the fetal skeleton can be demonstrated on the film, does the rontgenogram become a positive sign of pregnancy." In a recent article in Sur-

gery, Gynecology and Obstetrics, Burch described what he believes to be a pathognomonic sign of pregnancy, revealed by the x-ray after the production of pneumoperitoneum. His plates show a much "thickened uterine wall with a distinct cavity and in this cavity a mass." While the plates are convincing, the series of cases is very small.

The above discussion reveals the limitation of the diagnostic methods applicable to early pregnancy. In view of these shortcomings, it is not surprising that mistakes are made and that the surgeon is in constant dread of being misled. Among the more common gynecological conditions which give rise to confusion are:

(1) Uterine malposition with lacerated cervix. The following case report serves as a good example of this condition:

A multipara, aged 26, complained of lumbar backache and dysmenorrhoea, which began three and a half years ago, after the birth of her last child. After the catamenia was re-established her periods came on every three weeks and lasted four or five days. Six weeks ago she missed a period, but a few days ago there was a slight show which lasted two days. For the past two months she has had some indigestion, manifested by anorexia, nausea, and epigastric discomfort which is worse in the morning before breakfast. Since the onset of the present illness she has lost six pounds in weight, but there has been some recent gain. Examination of the chest showed signs of an old, inactive pulmonary tuberculosis. Pelvic examination revealed a soft, lacerated and patulous cervix and an enlarged soft uterus in third degree retroversion. There was a definite bluish discoloration of the vaginal mucosa. At a subsequent examination, ten days later, the signs were even more suggestive of pregnancy. Owing to the chest findings, it was decided to curette and to elevate the uterus in spite of a strongly suspected pregnancy. At operation the uterus was found to be empty. The interesting features in this case were the suggestive history and the misleading physical signs.

(2) An interstitial fibroid, which is symmetric and edematous may simulate a gravid uterus very closely; especially if the cervix is soft and patulous as the result of laceration and chronic infection. Differential points are usually found in the menstrual history and in the incidental physical findings, but occasionally doubt remains until the abdomen is opened. If pregnancy exists, the uterus has a purplish hue, whereas the color of a myomatous uterus is pink. The presence of a large corpus luteum is additional evidence of pregnancy, but it is not positive, because macroscopically the corpus luteum of pregnancy differs from that of menstruation only in size. If the diagnosis is still uncertain the uterus may be incised, but I have never found this necessary. Fibroids and pregnancy occasionally exist together, but one usually eclipses the other. I shall cite such a case:

A housewife, aged 42, entered the Methodist Hospital April 3rd., 1924, complaining of scanty, prolonged menstruation, which began one year before and which has continued. Since that time the flow has lasted from two weeks to one month and there has been no definite missed period. The patient has two children living and well and has had two miscariages, both occurring in the first few months of pregnancy. The history otherwise was irrelevant. Pelvic examination showed a lacerated, rather soft cervix and an enlarged boggy uterus irregular in contour owing to the presence of several small, firm masses. There were no changes in the breasts and the rest of the physical examination was essentially normal. A diagnosis of fibroids was made and operation was advised. However, owing to the consistency of the cervix and uterus, the possibility of a complicating pregnancy was explained to the patient. At operation multiple fibroids were found, but the uterus was enlarged, soft, bluish purple in color. There was a corpus luteum cyst of the left ovary. These findings confirmed the suspicion of pregnancy, which, however, in view of the history, did not contraindicate hysterectomy. Section of the specimen after its removal showed an early pregnancy, which is seen in this photograph.

(3) Carcinoma of the body of the uterus when well advanced will produce a soft, symmetrically enlarged uterus which may be difficult to distinguish from the edematous fibroid and likewise from early pregnancy. The seriousness of such mistakes is evident and the diagnosis should

be established by currettage before the abdomen is opened, because the operative indications are different.

(4) Dermoid and ovarian cysts may produce changes in the breasts, such as increased pigmentation and colostrum-like fluid, but these conditions are seldom confused with early normal pregnancy.

Speciment with sac opened showing decidual tissue.

(5) As a rule, the typical case of ruptured extrauterine pregnancy offers little difficulty in diagnosis, but the condition is seldom, if ever, recognized, before bleeding has taken place in the sac. Differential diagnosis of the different types of ectopic pregnancy is beyond the scope of this paper. However, the confusion of ectopic gestation with abortion of a normally implanted ovum, is a sufficiently common error to require differentiation. The patient as well as the doctor is sometimes misled, and seeks criminal abortion. Fortunately in the majority of cases the following points of differentiation will serve to make the distinction. In ectopic pregnancy, the pain is usually on one side; it is more severe and sudden in onset and tends to grow less intense. In abortion, bleeding from the uterus is more profuse and the blood is bright red; the cervix is more dilated and the pain is spasmodic in type and more centrally located. Persistence of uterine bleeding after curettage is regarded by some as an important point, but it is available too late to be of value. A leucocytosis and some elevation of temperature is uncommon in abortion without infection.

The similarity between ectopic gestation and acute salpingitis is at times striking, but a careful history, the slower onset of pain, the high temperature and leucocytosis together with the examination of cervical and urethral smears, should differentiate salpingitis in the bulk of cases.

The close parallelism of symptoms and physical findings of early pregnancy and other gynecological conditions is evident and the above short series of case reports serves to illustrate some peculiar difficulties encountered by the surgeon. To overcome them, a number of diagnostic procedures are available, but no method is infallable. Preoperative diagnosis is accurately checked at operation where the surgeon is permitted to view the different pathological conditions which give rise to similar signs and symptoms. Through experience and analysis of diagnostic errors revealed at operation, he increases his ability to interpret the findings of a bimanual pelvic examination, which after all is our principal and most reliable means of diagnosing early pregnancy.

DISCUSSION.

Dr. J. W. Barksdale (Winona): I simply want to speak for a moment on the question of pneumoperitoneum and endorse the stand that Doctor Crisler has taken. I had the good fortune to be in Nashville two weeks ago at the meeting of the Tennessee State Medical Society, and Doctor Birch gave us a clinical demonstration of pneumo-peritoneum in a Nashville hospital. It seems to me that this is a procedure that is not without a certain degree of hazard. That you

can make an early diagnosis of pregnancy by this method I think is absolutely proven. Unfortunately, the earliest case that Doctor Birch had statistics for that had had pneumo-peritoneum by the uterine route and then proceeded to demonstrate the pregnancy by subsequent roentgenograms, the patient very promptly miscarried, but they had all the evidence to show that it was a four weeks' pregnancy, which is the earliest that has been ever demonstrated by this method. The method as generally used is that carbon dioxide is injected into the abdominal cavity through the wall. Doctor Birch maintains there is no danger whatever, that he has demonstrated that you can stick a needle anywhere through the abdominal wall you choose and you will never perforate a hollow viscus. Whether this is true or not, he has attempted it repeatedly. The carbon dioxide is given under 5 pounds pressure and injected 12 cc at a time. This must be done on the X-ray table, because the effects vanish so rapidly that if you use this method in the operating room and then remove the patient to the X-ray department, the effect of the carbon dioxide has vanished. It outlines the pelvic organs beautifully, and as the Doctor has said, you see the uterine mass in the cavity in the center and in the center of this another mass, and that Doctor Birch thinks is pathognomonic of pregnancy. I imagine very few of us will use this method.

One thing more in reference to pneumo-peritoneum by the intra-uterine method. This question has been written about and a great deal of work has been done by Hunner, who two years ago at the Southern Medical Association reported 500 cases of sterility treated in this way. Where there is an impervious tube they have done a good deal of work in restoring the potency of that tube and they regard it as a matter of therapeutic use as well as diagnostic. I enjoyed the paper very much.

Dr. J. A. Crisler (closing): I have nothing to add, except to thank Doctor Barksdale for his discussion, and to say that if there be a man who does a lot of surgery and does not occasionally run into a pregnant uterus connected with some pathology, for which he is operating, I say if there lives a man who never comes across an unsuspected pregnancy, no matter how careful he is, I want to go and take a prolonged course of study under him.

TREATMENT OF RAYNAUD'S DISEASE BY NEGATIVE PRESSURE*

RICHARD S. CRICHLOW, M. D.,

Medical Officer in Charge, U. S. Veterans' Bureau Dispensary.

NEW ORLEANS.

In submitting this article it is not the intention of the writer to go into definite details of the etiology of this disease or its pathology, but rather primarily, to give the final results of treating a case, together with the history thereto by the so-called negative pressure, or Bier's hypermia.

In 1862 Dr. Raynaud, in a medical journal of Paris, described the above named condition which he regarded as a vasomotor neurosis brought on by exposure to cold, emotional excitement, or some other condition, resulting first in local syncope, local asphyxia, and in the more advanced cases of thrombosis and gangrene, being bilateral and symmetrical.

The case I am reporting has all of these stages. The general treatment given in practically all of the reprints I have been able to secure, including those of Buerger and others, follows the same general line, namely, hot and cold application, the use of the Esmarch bandage, diathermy, and general medication, usually ending in amputation of the part or parts after gangrene has developed. The prognosis in these cases has been exceedingly grave, and this was also due to the fact that it seemed that every treatment used would sooner or later have a tendency to lose its effect, and it would therefore be necessary in order to effect a cure to have some kind of treatment that would put the circulatory system of the part concerned under more definite control wherein the vessels could be dilated and the circulation reestablished until the part or parts had an opportunity to return to normal.

*Read before Orleans Parish Medical Society, October 26, 1925.

Working upon this line, in July 1924, I came across an article written by Dr. Samuel J. Sinkow, assistant in the Orthopedic Department of the Atlanta Medical College, in which he reported a series of 20 cases treated by Dr. Gottleib, of New York, and himself by this method with very gratifying results, amounting to a cure in every case.

Not being able to secure any apparatus from the surgical supply houses that would satisfy the demands, I constructed the following apparatus:

Taking about five inches of the inner tube of an automobile tire and a Valentine irrigating jar, cone shaped, I passed the hand (or leg) through the inner tube, placed the inner tube in position about halfway between the wrist and the elbow, putting the hand in the jar, and stretching the distal end of the inner tube over the flange of the jar until same was made secure; then attaching a rubber tube about 18 inches in length to the small end of the jar, and putting a stop-cock on the rubber tube. Then with an air exhaust pump passed into the end of the small tube I opened the stop-cock and pumped the air from the jar, the rubber tube around the arm being air-tight. As the air is exhausted from the jar there is marked dilatation of the superficial blood vessels which causes the superficial veins to stand out like whipcords. The amount of air exhausted depends to a large extent upon the patient's ability to stand the pain. After keeping the air exhausted from one to two minutes it is necessary to release the tube and let the air come back into the jar; then, renewing the process of exhausting the air from the jar and letting it back in again for an interval of 15 to 20 minutes, depending upon the ability of the patient to stand same. This was repeated twice daily for the first week, then once daily for the next two weeks, then twice a week for the next month, and later once every ten days, keeping this up for at least a year.

The results were most gratifying. After the first application the patient was able to sleep very well without an opiate. The extremities became warm, and as the circulation re-established itself the few gangrenous areas of the hands cleared up or sloughed off. The patient's condition immediately began to improve. The claw fingers in the process of a short time began to disappear, and it was not long until the hands had returned to their normal condition. The lifelessness disappeared, and when the hands or extremities were pricked they bled freely, which they had not done in a long time.

The patient's condition has steadily improved until now he uses the jar once about every ten days, and in my opinion the con-

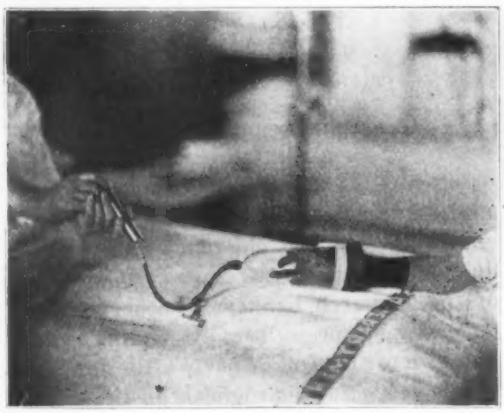

Figure 1—Showing apparatus as applied to hand.

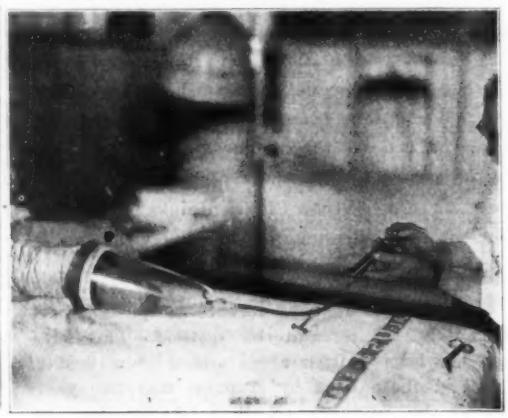

Figure 2—Showing apparatus as applied to leg.

dition from which he is suffering is entirely under control.

I am giving below the general history of the case which has extended over a period of years, namely, from September, 1918, and which has been under my direct observation since November 1919:

Mr. K., age 35, married, carpenter. Mother living and well. Father died of infection at age of 42, cause unknown. Three brothers, one living and well; two died in infancy, cause unknown. Three sisters; two living and well; one died in infancy, cause unknown. Previous history: Usual diseases of childhood; malarial fever 8 years ago. No other illness. Venereal history negative. Present illness: Began in September, 1918, about one mile from Verdun, France. Six weeks previous to that time he had spent on the front during which time he had suffered from cold and exposure, especially his feet and legs, which were wet most of the time. He first noticed numbness in his hands and feet, and later he noticed that at times his feet and hands were cold and clammy. These attacks were also associated with cramps in the legs. This condition gradually grew worse, and in November he noticed that the toes of both feet were purplish in color. About the middle of November he started on a hike into Germany, and when about forty miles out of Luxemburg he had to ask his captain to send him to the hospital on account of the marked swelling and redness of his legs and feet. He also stated that during October and November his feet were wet the greater part of the time, and that while they were not frozen, they frequently got pretty cold. He was evacuated to Base Hospital No. 30 at Toul, France, where he was treated for six weeks, the principal treatment being hot and cold applied alternately to his feet. He returned to the United States and was discharged April 30, 1919. During the latter part of March of that year he began to have trouble again with his feet and called a private physician under whose treatment he remained until seen by me in November of that year.

Physical examination:: Well developed, fairly well nourished; in bed with feet wrapped in flannel and complaining of intense pain, more marked in left foot; pulse 80, temperature 98.4. Teeth have some cavities; oral hygiene fair. Throat: tonsils somewhat enlarged. Chest: round and long. Lungs: negative. Heart: negative. Blood pressure, systolic 130, diastolic 80. Abdomen: negative. Extremities: superficial veins very small, hands and feet cold and clammy. Toes of both feet markedly cyanotic; also moderate cyanosis of fingers of both hands. Watery blisters were beginning to form about the toenail of the left little toe. The pain in the left foot was so great that he could not bear the weight of the cover. He was referred to the U. S. Marine Hospital, where he remained about two weeks, when he asked to be discharged. He then consulted Dr. Carroll Allen, who advised that he go to the Touro Infirmary, the B. W. R. I. agreeing to take care of his hospital bills. On account of gangrene having set in on the left little toe, on January 4, 1920, Dr. Allen, assisted by the writer, removed the toe under local anesthesia. This not giving relief from the intense pain and because of beginning gangrene on the great toe, left foot, on January 8th, under local anesthesia, by nerve blocking and infiltration, we amputated the foot at the tarso-metatarsal articulation. At the time of the amputation there was absence of pulse in the dorsalis pedis artery and very weak pulse in the posterior tibial artery, and while no adrenalin was used during the operation, bleeding was so slight that no vessels had to be tied.

Following this operation his condition seemed to improve and he was apparently free from pain until February 20, 1920, when he was again admitted to the the Touro and the second toe of the right foot was removed on account of gangrene. In April of 1920, he was referred to Dr. John Smythe, Surgical Consultant for the B. W. R. I., and was admitted to Hotel Dieu for treatment of gangrene of the second finger, right hand, which we amputated at the metacarpo-phalangeal articulation. From this time on an Esmarch constrictor was regularly applied to arms and legs once daily and in time he was taught how to use it. In May 1920, he was admitted to the Presbyterian Hospital on account of beginning gangrene of the great toe, of the right foot. At this time there was an absence of pulse in the dorsalis pedis artery and also the posterior tibial. Efforts were made to save any further operation except to treat the gangrene locally, but the patient continued to suffer so much pain and there being evidence of beginning gangrene on the heel of the right foot it was decided to amputate the right leg at the lower third, which was done by Dr. Smythe assisted by the writer on July 10, 1920.

Following this amputation his condition improved for a short while. In January 1922, I was again called to see the patient and found him in intense pain, hands cold and clammy, and on the left hand the terminal phalanx of the index finger, also the middle finger showed gangrene that had made considerable advancement. In order to alleviate his pain it was necessary to give him one-half grain of morphine sulphate and 1/100th of

a grain of atropine hypodermically. He was taken to the Presbyterian Hospital and put on 1/100th of a grain of atrophine to be given hypodermically every four hours together with just enough morphine to alleviate the pain. After continuing this treatment for four days the gangrenous condition of the hands disappeared, the circulation was re-established, and the patient's condition began to improve, so that on the 28th of January he was discharged from the hospital, returned to his home, and was given atropine only by mouth for four months. Finally the atropine began to lose its effect, and it was necessary to go back to the use of the Esmarch bandage and hot and cold applications. By keeping up this palliative treatment the patient's condition seemed to be at a standstill, and in the spring of 1923 began to grow worse. There was sloughing of the middle phalanx of the middle finger of the right hand, which later had to be amputated at the first phalanx. The pain was intense. Not only the various drugs and other methods were used in treating this condition, but Diathermy and X-ray were tried out, all failing to relieve same until finally it was necessary to give the patient morphine to relieve his pain, as we were struggling to prevent any further amputations.

In the early part of 1924 I began to use the apparatus described above, with the result that the patient's condition began immediately to improve. The fingers, which were claw-like, resumed their normal contour, the circulation was re-established, the ulcers and gangrene that developed subsided, and the patient's condition improved to such an extent that I consider it entirely under control, and now he sleeps well, eats well, has added weight; his general condition is good, pain is absent, and the extremities and stumps have practically resumed their normal condition. I consider his disease under control.

I might add, as I have described above the application for the arm, the only difference in the arm and leg treatment is simply the difference in the use of a larger rubber cuff that goes around the leg and the larger Valentine irrigator or jar. I find it best to have the rubber cuff about 12 to 15 inches above the part where treatment is wished.

In addition to using this treatment for Reynaud's Disease, I have also used it in several instances of senile arteriosclerosis with marked beneficial results.

As a mere matter of interest I might add that the above mentioned patient brought me a letter in January, 1925, that he had received from a gentleman in Worcester, Mass., who had heard of the patient's condition, in which he reported a similar treatment that was used by an ex-service man, Frank Frost, of Norfolk Downs, Mass., who was suffering from this same condition. In this letter he goes on to describe a very similar apparatus to the one we were using, and stated that as a result of this treatment Mr. Frost, who had been sent home from the hospital to die or shift for himself, has regained his health and is working every day.

Conclusions: This treatment brings the circulation of the extremities under one's entire control. Atropine or other drugs after a short period of time lose their effect and we do not get a dilatation of the vessels. With the Esmarch bandage it is difficult to get the hyperemia or pressure wanted because the bandage is applied at such a great distance from the periphery. With diathermy, although I followed the technique very carefully as prescribed by the best physiotherapists in the country, I have failed to produce a hyperemia equal to that produced by this apparatus. The patient can be easily taught to use this apparatus himself, and the results are most gratifying to the patient in relieving his pain and in stopping the progress of this disease, as well as restoring him to his former health.

DISCUSSION.

Dr. H. B. Gessner (opening): I have had no experience with this treatment. I want to repeat what the Chairman stated, that anything effective in the treatment of Raynaud's disease besides amputation is worthy of consideration. Those of us who have observed patients with symmetrical gangrene, whether you call them endarteritis obliterans, thromboangitis obliterans or Raynaud's disease, must welcome any help. This seems to be a great help.

Those familiar with Ward "S" of Touro Infirmary will recall the case of Tom, the Irishman, who eventually drifted to Charity Hospital, where he attempted to take his life. Another patient had a similar experience. Both lost the lower extremities to above the knee. It is certainly a sad thing to see men gradually lose feet and legs and suffer as these patients do.

The use of the Bier cups for furuncles and carbuncles has proved very effective. It beats the squeezing and pressing some people do. It gives you suction of pus and besides the hypermeia helps the patient to get well quickly. The Bier method here is very satisfactory.

I am inclined to expect a great deal from this treatment in obliterative diseases about the blood vessels. So far as the apparatus is concerned, Bier has probably prepared sets of receptacle that may save Dr. Crichlow a lot of trouble.

I have had no experience with this method but if I have occasion to use it I will be glad to do so.

Dr. R. S. Crichlow (closing); I am presenting at this time some pictures showing the apparatus in place as applied to the arm and as applied to the leg.

I have had in my work in all, five cases of Raynaud's Disease and Obliterative Endarteritis that I have treated with negative pressure, and on all of these I have obtained practically a control of the condition presented. These have been in the various stages, namely, that of beginning necrosis; one of senile obliterative endarteritis; advanced necrosis of the great toe of the left foot and two other toes.

In all of these circulations has been re-established, the parts have sloughed off, and the condition improved.

About one year ago I went to Dr. Elder, at the Charity Hospital, and told him of this treatment and the work I was doing along these lines, and asked him to keep his eyes open for cases of this type, and that I would be glad to co-operate with him in treating any of these patients. About one week ago I was called by Dr. Elder to see a patient at Charity Hospital who had been suffering from this condition since July 1st, the etiology of which was evidently influenza of a year previous. He has made marked improvement under this treatment, and I was to have shown him here tonight, but he was not able to come on account of the inclemency of the weather.

I have searched literature for similar treatments and other articles than the one to which I have referred by Doctors Sinkoe and Gottlieb, but have failed to find them. In looking up the use of Bier's hyperemia by Bier himself I have failed to find in his writings that he applied this treatment to obliterative endarteritis; however, Doctor Gessner may have come across an article which I have not been able to locate.

THE RELATION OF MEDICAL EXAMINERS TO LIFE INSURANCE COMPANIES.*

J. O. SEGURA, M. D.,

JACKSON, MISS.

When requested to write this paper I was a little hesitant to accept—not that the subject is not a timely one, but because of my inability to express myself in such a way as to be properly understood and do the subject justice.

Life insurance today is one of the largest business institutions in the world—a business built not for mercenary or monetary motive, but for the good it can do the multitude composed of the policyholders and their families. Because of this magnitude life insurance companies have to depend upon some one to make the proper selection of the risks applying to become a part or members of this great enterprise and family, for it is a large family. This has been delegated to the medical profession for two reasons:

First, for its integrity in the community; second, for its qualifications as professional men with ability to detect physical defects which would render certain risks uninsurable at the regular rate.

When life insurance was first started the selection of risks was done by a Board of Laymen at the Home Office, and each applicant was required to call at the Home Office to be inspected by this Board. Medical Examiners were not used in those days, but as the business grew and the companies began to expand into additional and more remote territory it was found necessary to devise some means of selecting the risks without placing the burden of expense and the loss of time on the applicant to come to the Home Office for the inspection, so it was then that the Medical Department was organized with the duty of selecting physicians in the field of operation that would perform the function of the inspection board in a creditable way.

To achieve success in any great undertaking an efficient service is necessary in every branch. In the business of life insurance, while there is much energy and time spent in securing risks, there is also much thought given to making them safe. If the risks are not chosen and accepted on a sound basis, there can be little hope

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for stability and permanence in any other part of the undertaking, and as a result the company falls short of success. Therefore the Medical Examiner plays no small part in the selection of risks.

It is true today that certain companies are insuring certain risks without medical selection, such as group and industrial business. It may be well to bear in mind that there obtains today an opinion slowly gaining ground that some risks, of necessity not large, may be safely insured without medical examination. This opinion is obtained on the part of the companies because of the growing insincerity of the Medical Examiners as expressed by the manner in whch the reports reach the Home Office. It must be remembered, however, that this does not apply to all Examiners, but to a very large percentage at least.

Competition in all lines of business has recently become so very keen that the agent in the field and the officials at the Home Office ask for promptness of service in all departments. In no department does promptness of service count for more than in the Medical Department. Since so much depends upon the reports of the Medical Examiners, delay in getting the applicants examined, due to the indifference of the Examiners, reacts badly on the applicants, the field force and the Doctor himself. The applicant changes his mind, the agent and managers are very much disgruntled and the Doctor is blamed. Therefore it behooves the Medical Examiners, as agents for the company, to lend their co-operation and best endeavor to assist the agents in getting the applicants examined and mailing the completed examination blanks to the Home Office promptly.

It is a matter of great regret when I say that many blanks are received at the Home Office with as many as ten and more omissions and mistakes. There is no excuse for this because the last question on the blank, "Did you review all the answers on this and on the reverse side?", is intended to remind the Examiners to look for omissions and incorrect statements. Yet I have found this is always answered "Yes," notwithstanding that many of the questions are unanswered. In principle this is a greater reflection on the Medical Director and referee than it is on the Examiners, because in making his selection the Medical Director endeavors to select the able, well educated man and one whose standing in the community is beyond reproach and will be a credit to the company represented by rendering efficient service.

To those of you who wish to undertake the work of examining applicants for life insurance, and to those who desire to continue in that work, it is urged that you give earnest thought and study to the subject of insurance medicine.

The position of Medical Examiner for a life insurance company is remunerative, and is well worthy of your thought, care, study and consideration.

It is to be remembered that the examination, as written, is part of the contract entered into by the applicant and the company, and that many times a large sum of money is involved. It is therefore very important that the work be done well, and that the Examiner keep in mind that he is in the employ of the company and not that of the agent or applicant, and that the company pays him to ascertain all the facts pertaining to the applicant's past and present physical condition.

Many examiners seem to feel that they have done their duty when they have answered all of the questions in the blank. This is not true. A real examiner does much more than is actually called for. He notes the color and condition of the lips and gums, the skin, the clearness of the eyes and speech, the gait and build. He looks at the tongue, teeth, throat, looks

for tumors; tests the reflexes; notes the condition of the muscles and looks for signs of recent loss or gain in weight. He observes the neck for signs of goiter, or for evidences of enlarged cervical glands or general glandular enlargement, and searches the applicant for any evidence of syphilis. If he has knowledge, or even suspicion concerning the applicant, that he feels would be of interest to the company, he should always make record of the same in his report or set forth the facts, with details, before the Medical Director in a personal letter. He sometimes advises the company to investigate the applicant's habits carefully, or to write to a certain Doctor for information concerning the past or present health of the applicant.

Such an examiner is a delight to a Medical Director, and he is sure to retain his commission as long as he cares.

In the span of many years that the companies have been operating and the accumulation of a vast amount of data and statistical information, we are now able to insure certain risks that heretofore were declined outright. This, however, can be done only when our Examiners give us full details of the impairment noted. For instance, if an examiner reports a heart murmur without giving full details, the Medical Director must of necessity imply the more serious interpretation to this murmur and take it as the result of a decompensating heart, naturally taking adverse action on the applicant when as a matter of fact the applicant may be entitled to insurance.

A heart murmur may be either functional or organic; if functional, which is frequently the case in the young subject, it is usually disregarded. However, if the murmur is organic, it is desirable to have the full particulars to diagnose the case properly and give it the proper insuarnce classification.

By the full particulars I mean, state the relation of the murmur to the cycle of the heart, the area of the greatest intensity, the direction transmitted, the size of the heart and have the applicant exercise to ascertain any evidence of myocardial weakness. Note carefully the pulse rate before and after exercise. After these facts have been determined, go into the personal history of the applicant for a history of some acute infectious diesase antedating this heart condition, such as acute arthritis, tonsilitis, etc.

If all these facts are presented to the Medical Director he will have sufficient information to give the applicant the proper insurance classification, thereby issue to him the kind and amount of insurance he is entitled to which, without these facts, the company could not do.

As an illustration of the classification that we put to heart murmurs when all the facts are available, the following will give you a fair idea:

	Best Type	Average Type		
	With or without Small Hyp.	With or without Hyp.	Moderate Hyp.	Marked Hyp.
Mitral R.	60	75	100	125 up
Mitral Obst.	200	200	250	350 up
Aortic R.	200	200	250	350 up
Aortic Obst.	75	100	125	150 up

Pulmonic (same as (Aortic)
Tricuspid (same as Mitral)
Double murmurs (double the rating)

All the foregoing ratings are for simple, uncomplicated murmors. If in addition, the pulse is rapid, irregular or intermittent, an extra rating should be added for these additional impairments.

The blood pressure should be carefully observed, and if the diastolic or systolic, or both, are low, the case should be viewed with suspicion and determination should be made if possible whether there is any sign of failing compensation, which of course would require declination. A heart murmur developing after the age 40 should be closely scrutinized to determine whether this represents myocardial change, in which event the risk is very serious.

DISCUSSION.

Dr. H. M. Folkes (Biloxi): Life Insurance, properly safeguarded, is the safest heritage a man can leave to his family. Doctor Segura's paper is very important. It cannot be discussed in five minutes. As a matter of fact, the whole three days of this session could be taken up with the question of life insurance and its relation to the physician. It is not alone the physician, nor the applicant, nor the company, that is interested in this proposition, it is all of them. When a man finally takes life insurance—very few people go to an agent and ask for life insurance; they take it because it is thrust upon them, but after they have it they realize its extreme value. When a man goes to a doctor to be examined for life insurance it is the duty of the doctor to give him the very best there is in him. My ten years' experience as a medical director has taught me several things, and the first is honesty. If a man cannot be honest in life insurance examination, then he should not accept a commission as examiner. To make a life insurance examination properly demands the best there is in you. I have known physicians to take a specimen of urine, hold it up to the light, and say "That is all right; there is no albumen." That man stole his fee for that examination.

The next is moral courage. It requires a high degree of courage to turn one of your friends Very seldom do doctors take the trouble to find down, but it must be done sometimes, and the man who cannot do it should not accept the commission. I knew a former President of this Association who would never undertake a life insurance examination, because he did not want to make any of his friends angry by turning them down.

The next important thing is efficiency. If a man is not properly qualified to make a life insurance examination, he should not attempt to do so. No life insurance examination can be made properly within the time usually given it by most practitioners of medicine. Certainly it cannot be done in 15 or 20 minutes. The truth is that a correct life insurance examination is probably worth $100.

The next thing is loyalty to the company. Doctor Segura has brought that out clearly in his paper. The doctor represents the company, he does not represent the agent nor the applicant for insurance. A man practicing in a community oftentimes knows things about the people in that community, he knows their heritage and their shortcomings and other things, and certainly he should be loyal enough, carrying out the suggestions made by Doctor Segura, to say that this man is a syphilitic, that he has hardening of the arteries, he can say that he has not put this in the examination, but that such is the case.

Then there is the willingness to do the work. If a man is so busy and has such a practice that he cannot afford to do this work, he should not try to do it. It is hard to do. I have been doing it 30 years and I know how hard it is to deal with the agents, they frequently make life a burden to you, I must admit, but the point is that if the doctor undertakes to make an examination he should be willing to sit down and quietly concentrate his mind upon that particular individual and that particular application and give the best there is in him to this work.

The last thing is the question of social disease. out from the life insurance applicant whether he has had syphilis or gonnorrhea. They may ask him the question, but rarely do they make an examination. A short time ago a man went from one of the parishes in Louisiana to New Orleans, and told a relative he felt badly. This man asked him if he had life insurance, and when he said no, this relative said, "Come on, I'll get you a policy." He did, and the man took out a policy for $50,000, and in 60 days he died of cancer of the throat. I do not say that the majority of doctors can diagnosis, cancer of the larynx, but the majority of doctors can differentiate between heart murmurs.

Dr. J. O. Segura (closing): In closing I wish to say that I believe you have gotten more out of Doctor Folkes' discussion than you got out of the paper. Doctor Folkes is a very able and capable man in the discussion of any question, and I think his discussion in this case is very valuable.

I have nothing to add, except to say that the majority of companies throughout the United States have the attitude at the present time of going into the non-medical life insurance business. That does not mean that they will do away altogether with life insurance examinations, but it does mean that the smaller cases, from $10,000 down, which includes about 90 per cent. of the business written, will probably be done non-medically. They cannot do it universally at the present time, because of the laws of the various states, but in a good many states they have been able to get the laws amended so they can write that kind of business. There is a move by some of the foreign companies to get the legislature of Mississippi to amend the laws so they can do this kind of business in Mississippi. I was approached by some of them, but I have always been opposed to it, and always expect to be; however we may have to follow suit. Competition today is the life blood of business, and unless you follow suit in the competitive world, you cannot get very far. I think the day is coming when the majority of life insurance will be written without medical examination and I think probably it would be a good idea for you gentlemen to think about this matter and

perhaps bring forth some way whereby it could be stopped. The remuneration for life insurance examination in the United States amounts to a large sum and a good many companies feel that they can save enough on the medical fee to take care of the extra mortality incurred because of the lack of examination. That is problematical in my mind. It is true that they have done this in Canada and in England for the last 20 years very successfully. However, conditions are a little different in those countries. I thank you.

THE STATUS OF THE USE OF MERCUROCHROME 220 AS AN INTRAVENOUS MEDICATION.*

M. S. STRINGER, M. D.,

Pathologist, East Louisiana State Hospital,

JACKSON, LA.

The current literature has numerous articles on the use of Mercurochrome 220 as an intravenous measure in the treatment of various septicemiae and local infections. Since the introduction of this drug, there have been numerous "panacea-like" claims made for its powers, and many miraculous cures attributed to its use. Other investigators have been disappointed, and many failures are chalked up against it.

Mercurochrome 220 was introduced by H. H. Young and associates as a genito-urinary antiseptic in 1919.(1) After various drugs had been tested, as to germicidal powers and toxicity, they recommended Mercurochrome 220 as a safe germicide of great power. Their findings were, briefly: that it was capable of ready penetration to the deeper layers of tissue; that it caused only slight irritation, if any; that jossessed a high germicidal activity; that it was highly soluble, and made a very stable solution; and its toxicity was slight.

Their experiments showed that a one per cent solution did not irritate the pelvis of the kidney of a rabbit when retained for five minutes, but stained the epithelium and submucosa deeply. Intravenous administration of 10 mg. per kilo in dogs, and 5 mg. per kilo in rabbits, produced no harm. However, 10 mg. per kilo in rabbits killed them in twenty-four hours. There was a transient albuminuria with no casts with the smaller dosage. There was no increased retention of urea, but a decreased phenol-sulphonphthalein output. One per cent solution in the eye caused no irritation of the conjunctiva.

By the use of urine as a diluent, they showed B. Coli killed in one minute by a 1-800 dilution of the drug. Staph. Aureus was killed in one minute by a 1-1000 dilution. In 1-5000 dilution, B. Coli was killed in one hour. Staph. Aureus was killed in one hour by a 1-10,000 dilution. A slightly acid medium was found best suited to its action.

Swartz and Davis(2) showed the drug Mercurochrome was forty times as effective against gonococci as against B. Coli, *in vitro*, and further showed that solutions of the drug lose their potency on standing. This loss amounted to twenty-five per cent in thirty days, and showed the necessity for the use of fresh solutions.

In blood serum, Mercurochrome kills bacteria in one minute, in a dilution of 1-600. Bile and urine can be rendered bacteriostatic, if not germicidal.(3)

The success of local applications of the drug, and its low toxicity, led men to try it intravenously in blood stream infections and for treatment of local infections, removed from the surface of the body. Piper,(4) Colston and Hill,(5)(6) showed that intravenous administration of Mercurochrome produced remarkable results in patients suffering from blood stream infections. Tests on rabbits showed the serum to have an increased bacterio-static action following such an intravenous treatment. The serum was most active in fifteen to forty-five minutes after injection. The urine, following injection, was found to have an increased bacterio-static action, which

*Read before the East Feliciana Parish Medical Society.

was greatest one to five hours after administration.

The literature on every hand gives reports of cases treated with Mercurochrome intravenously with remarkable recoveries.

However, all the claims cannot be accepted at their face value. Careful study of reports shows us that there has been no positive blood culture in very many of these cases, and that their previous and subsequent courses make it very hard for us to accept the authors' claims. As is well known, many septicemiae are transient. There is no septicemia in typhoid fever with a positive Widal reaction. The presence of furuncles over the body is a sign of cure being established naturally in other septicemiae.

Our personal observation of cases has been limited to those in Charity Hospital, New Orleans, during the year 1925. To our knowledge, on only two cases, were positive blood cultures reported, both hemolytic streptococci. One of these cases died within twenty-four hours following an intravenous injection, despite a subsequent negative blood culture. The other patient lived with a persistent positive culture several days. At last information, she was still alive. Practically all of the other cases terminated fatally.

The literature cites numerous cases in which this mode of therapy has failed, and the patients have died. These failures are attributed, by more ardent supporters of the use of Mercurochrome, to the lateness of administration; that the patient was "dead" before the drug was used. At the same time, cautious men point to these cases and tell us that too much can not be expected and care must be used.

How does the drug act? Does it act as a germicide, or is its effect the same as some foreign protein injected into the blood stream? As demonstrated by Young,(3) the uniform low concentration killing power of Mercurochrome is 1-600 in serum, in one minute. In urine, which is a better medium due to its slight acidity, it kills B. Coli in one hour in a 1-5000 dilution, and S. Aureus in 1-10,000. Redewill and Potter,(7) as quoted above, state that the bacterio-static activity of the serum, after injection of the drug, is greatest in fifteen to forty-five minutes. This shows the effectiveness of the drug to be confined to the lower dilutions. Since there is two to three-thousand cubic centimeters of blood in the human body, simple arithmetic will show that thirty c.c. of a one per cent solution, the average dose, will give about a one to ten-thousand dilution. Hill and Colston,(5) showed that the effectiveness of the drug is not increased by massive doses. They found that the bacterio-static action of urine is not increased when the dosage of Mercurochrome is pushed almost to lethal amounts. Hirshfelder, Malengren, and Creary also showed that intravenous injection of Mercurochrome did not cause adematous fluids to become bacterio-static.

Sir Almoth Wright(7) has shown that leucocytes furnish certain bacteriocidal substances immediately when living or dead bacteria are injected into the blood-stream. Since these substances are effective against all bacteria, they are termed "polytrophic." He has shown that some drugs, such as arsphenamin, do the same thing, and it is suggested that this is true of all antiseptic drugs in the blood stream.

What are the dangers of using Mercurochrome intravenously? They are the same as with any intravenous medications. First, accidents of technique are possible. The drug is twenty-six per cent mercury in the form of hydroxymercury-di-brom-flourescein. This form is of low toxicity, but contains a considerable amount of mercury. Mercurochrome is excreted from the body by way of the bowels, kidneys, and accessory G. U. organs.(7) Lee(10) has proven that about forty-five per cent of mercury is thrown off through the bowels, and, fifty-five per cent through the kidneys. Redewell

and Potter(7) claim that secretions of the seminal vesicles and prostate possess strongly bacterio-cidal powers after Mercurochrome intravenously, and attribute this to excretion of the drug through these organs. Idiosyncrasies to mercury must be guarded against. There is possibly an accumulative effect followed by diarrhea, vomiting, and salivation. Excessive doses caused purgation, and the stools are stained with the dye.

There may be toxic nephritis, of "cloudy swelling" type, accompanied by albuminuria following an intravenus injection of Mercurochrome. Its use in the presence of acute nephritis, without disaster, has been reported, but is of course a gamble. The use of opium at the same time is contraindicated, except extreme care be used.

Corper(9) has shown that intra-cutaneous injection of solutions of over five tenth's per cent are accompanied by definite pathologic changes leading to ulceration.

At the same time, it is to be noted that those cases showing moderate or severe reaction give the best clinical results. Chills, sweats, rise in temperature, vomiting, diarrhea, and etc., characterize the reaction and seem to be indicative of beneficial prognosis.

To summarize:

Many marvelous cures are attributed to the use of Merocurochrome 220 intravenously in the presence of septicemeae. practically all types, and in many local infections, removed from the surface of the body.

The drug cannot be concentrated in the blood stream in germicidal strength.

It is necessary to use fresh solutions.

It must be given while the patient has a margin of natural resistance and is most effective after moderate reactions.

The conclusion must be that we can not assume Mercurochrome 220, used intravenously, to be a panacea in septicemia. Its action is most likely that of an agent to produce a systemic reaction, emphasizing the natural defenses of the body. Though its use is not without danger, its low toxicity recommends its use in extreme cases, and affords a not wholly explained chance of benefit in those cases with a certain margin of "fight" still present.

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STUDIES IN CLINICAL MANIFESTATIONS OF BILIARY TOXEMIA*

A. L. LEVIN, M. D.,

NEW ORLEANS.

Biliary toxemia, a familiar medical phrase, known to the average individual as "biliousness" and listed on the medical exchange as a comparatively benign malady, deserves a little study and consideration. We all seem to know the symptoms of biliousness, but who knows what is the nature and the formula of that poison which produces the symptoms? Is it a chemical substance or a bacterial product? How does it act? There is no answer as yet in the medical literature to the above questions.

The liver, the largest, most important, most abused, most neglected and the least understood organ in the body is probably the primary seat of the disturbance. In recent years, this organ received a great deal of medical attention and extensive research work has been carried on to de-

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termine its normal and abnormal functions. Bile, the product of that organ, is being studied and analyzed on quite an extensive scale; we realize more and more our shortcomings and those of our medical ancestors in that particular field.

The term "biliousness" is as old as the hills; I am not dealing, in this paper, with that group of symptoms in the nature of a digestive disturbance which can be traced to biliousness and relieved by a dose of calomel. My aim is to interest the rank and file of our profession to trace certain clinical manifestations of obscure origin which all of us observe daily in our routine work to a possible disturbance of liver function. This will possibly bring us nearer to the solution of the entire problem of biliary toxemia.

The clinical manifestations which are to pass before us in a critical review are: Migraine, certain forms of chronic diarrhea, heartburn, halitosis, toxemia of pregnancy and chronic urticaria. The above phenomena have been recognized in every period of medical history, have formed a fruitful source of discussion among the profession of every age, and in spite of that, we can still use the phrase of the psalmist, "I have been young and now I am old, yet have I not seen the right solution to the above problems."

Admitting for the sake of argument that Widal and his co-workers are correct in their statement that the liver possesses a proteopexic function, and that certain food products before they assume a new and proper chemical formula when they gain entrance into the portal circulation, become unwelcome guests and produce a crisis, and that Rosenthal's method of studying liver absorption and elimination and other methods can be accepted, a sound working basis for the phenomena under our consideration can probably be established.

The term "biliousness", according to W. S. Fenwick, embraces two forms. The irregular recurrence of certain gastric phenomena is commonly designated as a bilious attack, while the more complex form of dyspepsia, with evidence of a deficient excretion of bile, is referred to as chronic biliousness. Let us endeavor first to familiarize ourselves with the symptoms of chronic biliousness, as they are the ones of interest here. Fenwick describes them as follows: Giddiness, nausea, palpitation, flatulence, a sensation of bodily fatigue, a feeling of oppression in the head, a greasy sallowness of the skin, lack of appetite, eyelids are dark and heavy, the conjunctivae are yellowish, the hands are clammy, and in some cases, there are acidity, constipation and spots before the eyes; in other cases, there are a dull headache, lethargy, drowziness, and impaired powers of mental concentration, or persistent vertigo. The urine is scanty and dark in color, the pulse slow and the temperature subnormal. In advanced cases, slight icterus is a permanent feature and the urine is never free from bile.

John B. Deaver, writing several years ago on "The more remote consequences of infectious bile," says that infection of the biliary tract leads to many varied lesions, with either easily recognized or obscure symptoms.

It is important, vitally so, in fact, for us to bear in mind that practically most of the symptoms described by Fenwick in chronic biliousness are the constant companions of those who suffer from migraine, heartburn, fetor oris, urticaria, certain forms of chronic diarrhea and the vomiting of pregnancy. Again, the above clinical manifestations are slow in their onset and once well established, are difficult of permanent eradication. These facts when properly analyzed will point to the liver as being at least "particeps criminis." Being a large organ—the largest in the body, the liver can withstand considerable abuse. Failure on part of the liver, set by nature as a screen to catch, withdraw and neu-

tralize certain irritant substances brought to it by the portal circulation; failure also to destroy certain toxins produced during digestion, the circulating life fluid with its unwelcome contents reacts unfavorably upon the walls of bloodvessels and all tissues. The thousands upon thousands of liver cells are not all put out of action or rendered impotent. Years may pass unmarked; as time goes on, it protests from time to time; such a temporary protest is called a bilious attack. Finally the liver cells go on a strike producing chronic, at times serious changes in the human machine. Bearing in mind such simple facts and realizing that in recent years we have learned to a certain degree to determine liver function, I have undertaken to observe and study liver function in certain groups of cases. The first group is that of migraine and its variations. Up to this writing, thirteen such cases have been studied, as represented in the tabulation in group 1.

Migrainous attacks, as we all know, may be precipitated by a great many different factors, which means that the actual underlying cause is wholly unknown, in spite of the fact that it is one of the oldest affections known in medical literature. Galen describes it in the following words: "How constantly do we see the head attacked with pain when yellow bile is contained in the stomach; the pain forthwith ceasing when the bile has been vomited." Whatever the etiological factor might be to produce the explosion, the vibrations of it very likely go through the liver, or may originate there. The evidence of liver function disturbance in this group is quite visible. The results of treatment along the lines of liver detoxication is quite striking in some of these cases. Isn't it possible that those chronic cases which stubbornly resisted previous forms of treatment and yielded promptly to liver detoxication methods, have had their origin in a poorly functioning liver?

ILLUSTRATIVE CASES.

Case 1. G. L. S., male, age 34, R. R. Yardmaster for past 25 years. Has suffered from migrainous attacks. The onset is sudden, very intense headache develops, culminating in nausea, followed by vomiting of bile, then he is relieved. Intervals well. Subject to constipation. Of late, attacks come on twice a week; he has weakened greatly and can hardly continue his work. The attacks are irregular in onset. It may strike him suddenly during working hours, or sometimes it wakes him up from sleep. Past history negative. Physical examination negative. Gastric analysis: Fasting stomach contained a quantity of bile. Test for free HCL negative; very little mucus; no food residue. Test breakfast: Quantity normal, free HCL 48, TA 75, chym. good. Urine: Indican, three plus, bile pigment one plus. Widal hemoclasia positive. Duodenal intubation: Infected bile obtained. Elimination of phenoltetrachlor in 20 minutes. Treatment along lines of liver detoxication, namely: Proper diet, regulation of bowels, non-surgical biliary drainage, and a few drugs to relieve the constipation and act as a stimulant to the liver. The results in this case were surprisingly good. The migrainous attacks have ceased entirely. It is over a year since his last attack, he has gained in weight and feels well in every respect. He is still following the dietary and hygienic rules.

Case 2. J. M. R., female, 38, housewife. Suffered from migrainous attacks since early childhood. At first it would come once or twice a year. At present once or twice a week. The attack is sudden and relief comes after vomiting of bile occurs. Past history: Appendectomy 20 years ago; tubal pregnancy 10 years ago. Eyes examined and corrected by proper lenses. Physical examination negative. Gastric lavage: Bile present. T. B.—Quantity normal, free HCL 50, TA 67. Urine negative. Widal hemoclasia strongly positive. Blood Wassermann negative. Phenol-tetrachlor elimination, 20 minutes. Treatment was started along the lines of clearing up biliary toxemia with excellent results. No attack past four months.

Analyzing carefully the cases presented in above table, we notice that cases with a definite background of migraine present strong and clear evidence of a biliary toxemia with a deficiency in liver function and are decidedly improved by proper treatment. Some cases with a very chronic cholecystitis, require sugical intevention, and are relieved by cholecystectomy, as pointed out by Waltman (Med. Cl. N. A., Jan., 1925, p. 1332). Other cases of headache, lacking the clear cut migrainous picture

LIVER FUNCTION DETERIMNATION IN FOLLOWING GROUPS OF CASES WITH CLINICAL MANIFESTATIONS OF BILIARY TOXEMIA.

Group I.—Migrain And Its Variations.

No.	Duration of Illness	Proteopexic Function	Absorption and Elimination	Biliary Pigment in Urine	Results of Treatment	Remarks
1	25 years	+	+	+	Good	No attacks 1 year.
2	18 "	+ +	+	+	Good	No attacks 4 months.
3	1 year	−	−	−	Not Imp.	Neurosis.
4	12 years	+	+	Trace	"	Pelvic Disease.
5	3 "	−	−	−	Fair	Menopause.
6	4 "	−	−	−	Good	Entamebic dysentery, error of refraction corrected.
7	12 "	−	−	−	Not Relieved	Artificial Menopause.
8	10 "	−	−	−	Relieved	Wass. 4 plus anti-luetid treatment.
9	5 "	+	+	Trace	Relieved	No attacks 6 mos.
10	7 "	−	−	−	Not Relieved	Pulm. T. B. Pelvic Disease
11	12 "	+	+	Trace	Relieved	No attacks 8 mos.
12	3 "	+	+	−		Under treatment.
13	9 "	−	−	−	Not Relieved	Artificial Menopause.

Group II.—Heartburn.

1	2 years	+	+	Trace	Improved	Cholecystectomy.
2	1 year	+ +	+	"	Improved	Medical treatment
3	4 "	+	?	Trace	Not Imp.	Appendectomy advised.
4	2 years	+	−	−	Not Imp.	" "
5	2 "	−	+	−	?	Left city.
6	7 "	−	−	−	Not Imp.	Very chronic type
7	5 "	+ +	+	Trace	Not Imp.	Asthma.
8	1½ "	−	−	−	Not Imp.	Duodenal ulcer.
9	2 "	+	−	−	Improved	Prolonged D.D. and G.L.
10	3 "	−	?	−	Improved	Prolonged D.D. and G.L.

Group III.—Chronic Diarrhea.

1	15 years	+	+	+	Marked Imp'ment	Cholecystectomy.
2	6 "	+	−	Trace	Improved	Prolonged D. D. and G. L.
3	9 "	+	+	Trace	Improved	Prolonged D. D. and G. L.

Group IV.—Halitosis.

1	4 mos	+	+	Trace	Improved	Cholecystectomy.
2	10 "	+	+	"	Not Imp.	Cholecystecomy advised refused.
3	2 years	+	+	"	Improved	Medical treatment
4	1 year	+	+	"	"	"

Group V.—Vomiting of Pregnancy.

1	6 mos.	+	Not Tested	Trace		
2	3½ "	+	Not Tested	"		

Group VI.—Chronic Urticaria.

1	10 years	+		Not Tested	Improved	Medical
2	3 "	+ +		Trace	"	"
3	10 "	?		"	"	"

In determining liver function, Bromsulphalein was used according to Rosenthal method.

and minus definite evidence of biliary toxemia, do not show deficiency in liver function, and are not relieved by treatment along the lines of liver detoxication.

CHRONIC DIARRHEA.

This disturbance is quite often a puzzling problem, even in the hands of the skillful practitioner of medicine. It is a type of diarrhea which cannot be put in any frame of the known classifications of diarrhea. The patient usually presents a picture of a chronic toxemia associated with abdominal cramps; the stools are usually mushy or liquid, dark greyish or greenish in color with an abundance of mucus and undigested food particles. Microscopically, no parasites are demonstrable; blood cells are usually present; not enough fat globules to suspect a pancreatic disturbance, but the myriads of bacteria present a lively microscopical picture. Drugs, diet and irrigation are of no avail. Examination of the biliary tract reveals a possible source of infection. Surgical intervention is the best mode of treatment.

ILLUTRATIVE CASE.

S. R. P., age 38, teacher. Past 10 or 12 years suffered from abdominal cramps and loose bowels; the cramps are very severe at times. Shortly after a meal, the bowels would move, after which the abdominal cramps would subside. Tenesmus is present at times; from 8 to 10 movements in 24 hours; no blood in the stools but undigested food and mucus. During the entire period of illness, she hardly remembers a day of relief; nauseated quite often and occasionally develops headache accompanied by vomiting. The case has resisted every form of previous treatment. Past history: Typhoid at age of 13, influenza in 1918, appendectomy a year ago without relief. Physical examination: Slight emaciation, no glandular adenopathy, teeth numerous fillings, tonsils small. Heart and lungs negative, abdomen relaxed, liver and spleen not palpable. Skin: Anemic, sallow and mauudy. Urine, bile pigment and gastric analysis: Marked subacidity, bile present Stools: Repeated examinations for parasites or ova negatives; greyish brown color; putty like consistency, blood and pus negative, mucus excess, food particles present, occasional fat globule. Blood examination: Hgb. 70%, R. B. C. 4,630,000, W. C. 5000. Color index, 76. Differential N 73, LL 2, SL 22, E 3; malaria plasmodia negative. Widal hemoclasia positive. Proctoscopic examination: No ulceration. Phenoltetrachlor elimination in 19 minutes. Duodenal intubation: Infected bile obtained. In view of these findings, cholecystectomy was advised, and performed a year ago. Gall bladder was found very badly diseased. Since operation patient has made a wonderful recovery, has gained considerably in weight, her bowels are regular, stools well formed. She is on full diet, abdominal cramps have disappeared and she enjoys generally, good health.

This case and a few others convince me that infected bile is unquestionably often a cause of diarrhea which is not commolny recognized.

HEARTBURN.

In a previous paper on this subject (N. O. Med. & Surg. Jr. Vol. 76, No. 9, March, 1924), I have come to the following conclusions: (1) That heartburn does not primarily depend upon acidity, (2) that a toxic agent, biliary or otherwise, is the primary causative factor, (3) that the toxic agent through the blood stream produces a hyperesthesia, (4) that biliary toxic hyperesthesia is a better term than pyrosis or cardialgia. I have continued my studies and observations since and in a review of 50 cases with definite evidences of biliary disturbance, toxic hyperesthesia commonly called heartburn, was a prominent symptom along with other symptoms of biliary toxemia. This, in my opinion, is such a common phenomenon in biliary disease that it should be included in the long list of symptoms enumerated by Fenwick. The accompanying table of liver function determination in a group of 10 selected cases will demonstrate the correctness of my view point

HALITOSIS.

This subject has been described by me recently in a paper published in the April number of the N. O. Med. & Surg. Jr., 1925. I did not have time as yet to study the liver function in many of those cases but the few I have studied together with the clinical observations fully justifies me to reiterate my im-

pressions, (1) That in a large number of our gastro-intestinal cases with halitosis, oral sepsis is not the primary factor; (2) that halitosis is a warning signal, a reminder of a disturbed protectiver liver function and consequently it should receive our most careful attention.

TOXEMIA OF PREGNANCY.

This subject is receiving recently a great deal of attention in medical literature. The origin of the toxemia is a matter of speculation. J. A. Killian (Proc. N. Y. Path. Soc., Jan. to May, 1921), divides these cases into three groups, (1) Nephritic, (2) Hepactic or true eclampsia, (3) Mixed, impairment of renal function resulting from the hepatic toxemia. On the other hand, De Wesselow (Jr. Obst. & Gyn. of Brit. Emp. XXIX, No. 1, 1922), considers that there is no evidence of the existence of an hepactic as distinct from a nephritic toxemia of pregnancy. Both schools though agree that the liver does participate in the toxemia. I trust that enough interest will be manifested by the profession of our state to study liver function in these cases. The three cases of vomiting of pregnancy studied by me show definite liver function disturbance.

URTICARIA.

This common affliction may often resist treatment for months or years. The etiology is usually given in textbooks as follows: "It is usually produced through some alimentary disorder, the result of mechanical irritation of the stomach and bowels, or a toxemia." The three cases studied by me all show definite disturbances of liver function. It will probably be of great interest to mention here a case of pemphigus of the mouth, nose and left eye, which came under the observation of one of our prominent local oculists several years ago. The result of this affliction was disastrous to the patient's vision. Gastro-intestinal disturbances were present from time to time, culminating in deep jaundice with definite evidences of common duct obstruction, at which time I was called in consultation. The patient is now under my treatment and improving rapidly. The queston in my mind in this case is the possible relationship between the biliary toxemia and the pemphigus affecting this part of the body which is very rare.

A summary of the observations made, which are not conclusive but merely suggestive, will probably encourage energetic students of medicine to delve more deeply into the secrets of the liver and bring to light new explanations of phenomena of disease heretofore not well understood. The questions as to the nature of the formula of the toxin in biliary toxemia and how it acts cannot be answered satisfactorily as yet. We can only attempt to prove that chemistry and bacteriology very likely form a partnership, as it were, to undermine the efficiency of the most perfect machine in human nature, the human machine. We know that certain foods and drinks are not tolerated well by the liver, consequently irritation results; this favors stagnation of bile; stagnation begets bacteria, the presence of which spells inflammation. Perfect chemistry is then impossible in a damaged crucible, hence the vicious cycle resulting from the combination of bacteriology and chemistry. What then is the remedy to break up such a combination? The existence of a possible biliary toxemia should be recognized early; even in the transient type, though listed on the medical exchange as benign, steps should be taken to prevent a re-occurrence of a biliary stasis. The golden rules which have been stressed by leaders in medical science should be arranged in a sort of ten medical commandments and broadcasted by radio to the public. What are those golden rules?

(1) Endeavor to eradicate any possible source of trouble, wherever and whatever it might be, infection, faulty mode of living, error in diet, sedentary life, overwork, worry and anything which tends to produce

a short in the battery of the human machine.

(2) The more death blows to germ life and faulty chemistry that have gone into the biliary apparatus, the more life will come out of it.

(3) The more it is made a cemetery for ger mlife ,the more it becomes a nursery of health.

(4) The greater the care and attention given for the biliary apparatus to recuperate, the more all the tissues in the human body will flourish.

(5) Endeavor to keep the bile in a liquefied state.

(6) Endeavor to improve the drainage of bile.

(7) Correct constipation and prevent intestinal stasis.

(8) Prevent, if possible, the absorption of toxic biliary products by taking proper measures early.

(9) Do not make eating and drinking the prime object in life.

(10) Adopt the old Roman saying, "Homo sum, humani, nihil a me alienum puto," "I am a man and nothing that relates to a man is a matter of indifference to me."

All of these can be accomplished in the following manner: Diet, small and frequent meals; avoid fried foods, excess of fats, sweets and highly seasoned articles; drink plenty of pure water; drink alkalinized fluids, such as vichy, etc.; avoid alcoholics; the bulk of diet should be vegtables and fruit; plenty of exercise. Therapeutic measures for relief of symptoms and to assist in liver detoxication, such as drugs, gastric lavage, non-surgical biliary drainage and thermic agents. As the primary aim is to get rid of a toxemia, the treatment must be continued for a long time in order to obtain permanent results. The patient must be impressed with the importance of intelligent co-operation.

DISCUSSION.

Dr. J. A. Storck (New Orleans): The term "biliary toxemia," as used by Doctor Levin, should be clearly defined.

Before drawing any conclusions that bile, or primary liver pathology, is responsible for certain symptoms, we must be reasonably sure that many, or most of the symptoms and even the liver involvment itself, is not due to some other common cause. Among the possible causes may be mentioned: Intestinal putrefaction (not the result of lack of bile); lues, and bacterial toxins, elaborated in foci of infection—as appendix, tonsils, teeth, and so forth. Unless we feel sure of the absence of some such factor, then treatment directed at the liver and gall tract is hardly justifiable or rational, because this therapy is being aimed at an effect instead of at the cause. Therefore, before incriminating the liver, other possible causes should first be removed, and if the symptoms still persist, and can be corrected, only by liver treatment, then we may be justified in considering the liver the primary cause. Likewise, in cholecystitis, the toxic signs are very likely due to some factor other than bile itself, because sometime in non-infectious block, jaundice may be the only pronounced symptom, suggesting that unaltered bile alone is not very toxic. In some of the migraine-like cases cited, either intestinal hygiene, anti-luetic treatment, or correction of errors of refraction was carried out simultaneously with the liver and gall tract treatment.

Notwithstanding the constancy of liver pathology in eclampsia, the high blood pressure in eclampsia as compared to the low blood pressure in icterus, casts doubts on a biliary toxemia as the cause of eclampsia.

If alteration in liver function is responsible for certain manifestations, amelioration of symptoms should be accompanied by restoration of function, as indicated by liver tests repeated after improvement occurs.

It is to be hoped that such added sources of information as visualization of the gall bladder by the Graham method, still further development of tests for the various liver functions, and blood chemistry studies, will furnish more accurate information concerning the liver and bile.

The icterus index, perfected by Neulengracht, furnishes an indication of the degree of choloemia resulting from altered liver function, which other tests fail to give.

Dr. D. N. Silverman (New Orleans): The question of systematic symptoms from the relationship of the liver and biliary tract, remains quite a problem. In following Doctor Storck's line of thought, that is, treating the intestinal tract whenever there are evidences of putrefactive toxemia, I believe that it is in those very cases of systemic toxemia from intestinal disturbances that we should investigate other conditions such as the

liver and gall bladder. It is surprising in such cases to find that gall bladder infection is the source of the secondary trouble and the consequent toxic symptoms. Much work has been done and symptoms relieved by measures directed to the intestinal tract. Especially do I want to mention the excellent experimental work of Bass and others.

Of course we have methods of examining the liver under different conditions, but these tests do not necessarily apply themselves to the condition of the general system, that is, to the symptoms. We see grave liver disturbances with very deficient functions according to our tests, but we do not see in these particular cases as great systemic disturbance as in some of our ordinary biliary infections.

The relationship of the intestinal tract to the gall bladder is very forcibly brought out at times. We see complications of certain types with clear cut evidence of gall bladder disease. The underlying feature that we think may be the gall bladder disease, treated perhaps surgically, and with drainage the gall bladder and intestinal tract clears up and then we will have just the opposite state, instead of a putrefractive condition we will have a diarrhea of the active type. It is not always easy to say which came first or which last in these conditions.

I mentioned yesterday something relative to the visualization of the gall bladder and I wish to say a few words along that line now. I believe that, provided the liver function is good and the state of the liver also fair, that the condition, especially as regards toxic symptoms, will not be so grave in face of the fact that in these particular cases we may have considerable involvement of the gall bladder. We are using visualization to observe potency of the cystic duct, the size, location, function, and the emptying time of the gall bladder. Some of these gall bladders that are obstructed, with evident stasis, and some that do not have obstruction but are large and do not empty normally, still do not produce the systemic symptoms which have been so clearly brought out by Doctor Levin.

Dr. P. B. Salatich (New Orleans): I do not know of anything we know less about than the liver and gall bladder. It is rather amusing to hear or read a symposium on gall bladder and hear the different opinions. Doctor Levin tells you that in biliary headache if a man has bile in his stomach and vomits, the headache is immediately relieved. According to some of the late ideas, instead of doing a cholecys-enterostomy, a good many men are doing cholecys-gastrostomy. Instead of having some of the bile in the stomach you have all of the bile in the stomach, and this is certainly not healthy. If it is bile that causes the trouble why put the gall bladder directly into the stomach? Then again some men tell you that if you do a gastroenterostomy for ulcer of the stomach and duodenum your patient will not be relieved unless there is a possibility of regurgitation of the bile back into the stomach.

There is nothing that causes more pain, especially in the shouder, than trouble in the liver. That is brought out especially in cancer of the liver. You take a patient with long continued trouble in the liver and gall bladder, that patient coming to you with marked pains in the shoulder, you have to be extremely careful to make a differential diagnosis to tell whether the patient is not developing malignancy in that liver.

Your patient comes to you and has all the typical symptoms of gall bladder trouble—terrible pains and the symptoms that go with it. You operate on that patient and take out the gall bladder. The pathological report comes back some little trouble but not much pathology of the gall bladder. The patient is relieved of some pain, but very often he is not relieved of his symptoms and the surgeon is up against it. Of course a lot of these patients make themselves sick. I have a case right now, a woman whose gall bladder I took out a month ago and told her to be very careful about her diet. She was very careful. A few days ago I had to give her a hypodermic and a lot of hot water to make her vomit, and what do you think she vomited? Great big hunks of meat and red beans. The day before she had eaten cucumbers. In many of these cases the patients have been deprived for a long time of eating a good many things, and when they find their gall bladder is out, they just begin to eat anything. Many of them are never cured for that reason and the surgeon and medical men can do nothing more for them. Too many cases that the surgeon operates on are not relieved because they will not follow the diet plan that you lay out for them.

Dr. Sidney K. Simon (New Orleans): Doctor Levin has covered rather a wide range in his paper and it would only be possible to discuss one or two features.

Two of the principal functions of the liver are the detoxicating function and the liberation of bile function. Of these functions I think the liberation of bile is the least important. Bile in itself is not a toxic substance. Those of us who are gastroenterologists know how important the detoxicating function is, that is, taking the toxic substances from the intestinal tract and convert-

ing them into innocuous chemical material for circulation into the blood stream.

We have been making a serious effort in recent years to test liver functions and find some reliable means of knowing the functional capacity of the liver. These tests have hinged around the use of certain dye substances and considerable light has been thrown by the workers in this field, in determining what capacity the liver has for eliminating this dye from the blood stream. That gives us a measure of capacity of the liver cells as a whole, but it does not give us any inkling into the individual functional capacity of the liver cells. It is an opening wedge, as it were, but until we have some means of determining the individual function of the liver cells we will still be at a loss to understand all the very intricate chemical processes that go on within the liver.

The detoxicating function of the liver, as I said before, is something that we should like to know more about. We know that the liver loses its capacity under many pathological conditions to take poisons out of the portal circulation, and if these poisons are not taken out they get into the blood stream and produce toxic effects in general. These toxic substances arise in the intestinal tract, and one of the means of attacking that problem is to prevent the elaboration of these intestinal toxemias. The other means is to stimulate the liver in such fashion as to force it to eliminate the toxin. The old time method of giving calomel and soda, which even today we follow, and in which I am a great believer—that old time method to my mind is really scientific. It not only unloads the toxin from the intestinal tract, but it stimulates the liver function towards the detoxication, so that toxins may not be absorbed.

Dr. S. J. Couvillon (Moreauville): Dr. Levin has elucidated a subject which is quite common in general rural practice. I want to thank him for his paper; also, I desire to substantiate the statement of Dr. Simon, that, while many biliary toxemias emanate from the liver proper, yet the bulk of such toxemias lodges in the intestinal tract. I have had quite a large experience as a physician in the rural districts with biliary toxemias, where we have a good deal of malaria, typhoid, and conditions where dietary instructions are not well carried out. When medicinal measures have failed, I have had very favorable results from the use of the Jutte tube in relieving biliary stasis with toxemia, not only the voluminous substances I would get through the tube, but alike if not more, from the copious evacuations of the bowel following.

One case of interest which I would like to mention and that was biliary toxemia complicating pregnancy. I was called to see the woman, seven months pregnant, with a profound toxemia. The symptoms presenting were nausea and vomiting, pronounced jaundice, almost pulseless, practically moribund. She had been treated by other physicians and had been given plenty cholagogues and alkaline diuretics, but the condition grew worse every day. I had a Jutte tube with me and as a last resort I ventured to use it, introducing a strong magnesium sulphate solution through, and to my astonishment she stood the ordeal very well for three hours, and from that very day after having discharged through the tube and by the intestinal tract later all kinds of bilious substances, her pulse improved and with a repetition of the treatment five days later, I am happy to say that the toxemia of this poor woman was so relieved that at term she gave birth to a healthy child.

Dr. A. L. Levin (closing): I wish to thank Dr. Storck and the other gentlemen for the discussion of my paper.

Dr. Storck laid a good deal of stress on eliminating the primary focus of infection as a most important factor in the eradication of disease, particularly of the gastro-intestinal tract. No doubt he is right; I agree with him on that point; in the summary of my paper I laid particular emphasis on this fact, but I wish to discuss this point from another angle. Personally I believe that this has often been overestimated and overdone by physicians in general. Dr. Bel, in his able discussion yesterday with regard to the increase of cardiac disease, laid a great deal of stress also on the removal of infected tonsils and infected teeth as a main cause of heart disease. The point which I wish to bring out is a fact which we all know—that we are removing more tonsils and extracting more teeth at the present age than in any previous age in human history, and are doing appendectomies by the wholesale, and in spite of it, we have more heart failures in our present generation than ever before as recorded by statisticians of medical science. There must be another factor besides infection which largely influences the increase in cardiac disease and cardiac failures. In my opinion the faulty mode of life in our modern generation is unquestionably another very large factor. Modern life tends to weaken gradually the heart muscle and rob us of a great deal of nervous energy. We can look upon biliary toxemia in the same light. The faulty mode of our dietary regime unquestionably overburdens the liver. Its chemical processes are weakened and altered and if we could have correct statistics on diseases of the liver we would probably find a great increase.

Several gentlemen on the floor in discussing my paper spoke of intestinal toxemia and various

sources of infection. I believe that intestinal toxemia produces disease largely through the absorption of infection from the intestinal tract traveling to the liver, and there is where the real seat of trouble originates. Let us go back to our physiology and remember that whatever is absorbed by the intestines must go through the portal circulation which enters the liver. If the liver can act as a filter we are protected, otherwise it passes out without being properly filtered out or altered chemically and the result is biliary toxemia, not so much intestinal.

Dr. Salatich spoke of the presence of bile in the stomach without causing any disturbance. Personally I cannot agree with him. We do occasionally find normal bile in the stomach without any disturbance, but whenever we find in the stomach pathological bile we certainly have a condition which must be corrected sooner or later. I have never seen pathological bile in the stomach without causing trouble.

With regard to the operative technique which Dr. Salatich mentioned. This is sometimes done, but only when nothing else can be done, as we know that nature did not intend for bile to flow into the stomach, but into the intestinal tract, and bile in the stomach is certainly an unwelcome guest.

I wish to thank you gentlemen for your discussion and advise that you should carefully read the summary of my paper, follow it up closely in your private work, come back at our next meeting and tell me whether my observations are correct or not.

QUININE AS A PREVENTIVE OF MALARIA: A REVIEW OF SOME RECENT LITERATURE.*

M. A. BARBER,

U. S. Public Health Service,

GREENWOOD, MISS.

Quinine prophylaxis, in the strict sense of the term, means the use of the drug in the prevention of malaria infection—as a destroyer of sporozoites at the moment of their entrance into the body. We still have to do with a possible action of quinine, taken habitually and in small doses, on an infection already acquired, such as early cure or the prevention or amelioration of a clinical attack; so we will make use of a more general expression, "quinine as a preventive," and include in it not only quinine prophylaxis but any action of quinine taken primarily for preventive purposes.

We will use the term "recent literature" in a rather liberal sense, and consider papers which appeared as far back as the time of the World War—an event which added greatly to our experience in malaria if not so materially to our knowledge of it.

It would seem difficult to find a subject in medical literature on which there are so many contradictory opinions, even among authors of wide experience, as that of "quinine prophylaxis", and the differences of opinion are by no means wholly due to looseness in definition of terms.

Legendre,(1) in an address before the Société de Pathologie Exotique, summarized a large number of reports from men of different nations and experience which seemed to demonstrate conclusively the inefficiency of quinine in preventing malaria. In the discussion which followed this address, practically every speaker took the opposite view and held for the retention of a measure which, in their opinion, has been of great value.

Treadgold(2) made a summary of the opinions on preventive quinine of some 200 original articles published between 1880 and 1918. Of these, 34 writers gave statistics with controls. Twenty-six of the 34 favored "prophylactic quinine" and 8 opposed it. But an analysis of the results of these 34 writers with respect to the localities in which they worked gave ground for an interesting generalization. Where only natives of malarious countries were treated, 100% of the writers favored preventive quinine; but where the more susceptible immigrants were dealt with, only 27% favored it. As Treadgold puts it, "The benefit derived from the use of prophylactic quinine varies directly as the resistance of the individual taking it," that is, the greater the resistance the better the statistics.

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*Read before the Mississppi State Medical Association, Biloxi, May 12-14, 1925.

Instances might be multiplied to illustrate the diversity of opinion on the subject of preventive quinine in the vast literature on malaria which has accumulated since the war. The methods as well as the results of the workers exhibit an infinite variety. One is left with the impression that everything they did succeeded, and everything failed.

Under war conditions, both in armies and navies, the results of preventive quinine were, as a rule, rather disappointing, and many explanations are given for its failure. It has been alleged that the types of parasites found in southern Europe and Asia Minor are relatively resistant to quinine treatment; that quinine habitually given tends to produce quinine-resistant strains of parasite; that continued cinchonization of the patient may reduce his power of reacting favorably to the drug in case of a clinical attack. The opinion was rather general that lowered mental and physical condition of the soldiers rendered them less amenable to both preventive and curative treatment.

Great differences of opinion prevailed as to the proper dosage, and intervals between doses of preventive quinine. An obvious source of variations in the results of many experiments was the fact that not all members of a given unit received the drug, or, having it issued to them, did not swallow it.

Certain well-controlled experiments are on record. We will consider these, and ascertain whether we can obtain any light on the source of confusion in the literature or on the actual effect of preventive quinine.

Yorke and Macfie,(3) in their work on the treatment of general paralysis by inoculation with malaria parasites, gave some patients prophylactic teatment, sometimes 5 to 10 grains daily, for as long as five days before as well as on the day of inoculation by means of infected Anaphones. The patients regularly became infected unless treatment was continued at least ten days after the bite of the mosquito. They conclude from their observations "that quinine has little, if any, action on sporozoites, and that the mechanism by which development of infection is prevented is similar to that by which a cure is effected."

Somewhat similar results have been obtained by the brothers Sergent working with Plasmodium relictum in canaries. Birds became infected in spite of prophylactic quinine and harbored the disease in a latent form, as was proved by positive results on inoculating their blood into healthy birds. When quinine was discontinued the treated birds would sometimes develop active symptoms. The authors believed that their results supported the view that preventive quinine is of service, since treated birds either failed to show active symptoms or had the disease in a mild form, while controls showed a mortality of 30%. But in their experiments, as in those of Yorke and Macfie on man, quinine could not be depended on to prevent infection, and its effect was that of treatment of an infection acquired in spite of the use of drug.

A few of the better controlled field experiments may be briefly described:

Hanschell(4) had in medical charge 29 men engaged in military work in a malarious region of East Africa. All were given with their evening meal 5 grains of quinine and were seen to swallow it. Before darkness fell all the men were gotten under mosquito nets. Nine, who had nets broad enough to protect them adequately, escaped infection during two seasons. Eighteen, who had narrow nets, all got malaria in spite of the prophylaxis. All were easily cured by the administration, presumably in larger doses, of the same brand of quinine as that used in the prophylaxis.

Seidelin(5) employed a "week end" preventive quinine in the Belgian Congo. One gram of quinine on two successive days of a week (in some cases on two days with a "free" day between) was given with the idea of providing a dose strong enough to kill young schizonts. Frequent blood exam-

inations were made. In a group of 90 persons, inhabitants of a certain town and under more exact control, 65 showed parasites in the blood; but of this number only 15 exhibited clinical symptoms during the year (July, 1923-June, 1924). Thus the treatment here did not seem very effective in the prevention of infection, but in a large percentage of cases rendered it latent.

Other illustrations of well-controlled experiments might be given. Navy records, both of this country and of others, have furnished cases of sailors briefly exposed in a malarious district who contracted malaria in spite of prophylactic quinine, in some cases in doses of 15 grains per day.

From the evidence before us one deduction seems clearly justified: Preventive quinine, however faithfully administered, can not be depended on to prevent infection. One could not maintain that sporozoites are never destroyed by quinine on their entrance into the body, but it seems established that they often, if not always, escape such destruction. The action of preventive quinine, then, is largely on incipient infection, and our prevention merges into cure, such cure as can be expected from the small doses commonly given in preventive treatment. In our treatment we anticipate the disease. Communities in which malaria is endemic afford the further complication that one has to do with relapses as well as with incipient infections.

We have next to consider the evidence as to the possible value of this "preventive" cure.

The work on artificial infection with malaria in the treatment of general paralysis, now being carried on by many workers and already reaching into hundreds of cases, has clearly shown how easily new infections can be cured by quinine, and has emphasized again the value of early treatment. Yorke and Macfie record cures following the use of even five grain doses, provided such treatment is continued daily for at least ten days after infection. Again, we must give due weight to the testimony that the continued use of "prophylactic" quinine may lighten the course of a clinical attack. Further, it is quite certain that such quinine may mask an infection, may bring about a condition of "infection without illness."

The advisability of thus maintaining a condition of latent infection is questioned by some authors. Wenyon,(6) from military experience in Macedonia, states that daily quinine tended for a time to prevent relapse in already infected men. In one case a large body of men took a 24 days' course of 30 grains per day plus an iron and arsenic tonic. The immediate effect was a fall in the malaria admission rate, but the rate mounted again, and, before the course was finished the figures were higher still, and the latter condition of the soldier was worse than his first. Later attacks were the more difficult to treat on account of the previous dosage with quinine.

Kliger (7) concluded that quinine (0.6 gm. daily) used in the treatment of populations in Palestine, merely prevented appearance of symptoms, and that as soon as it was discontinued, clinical attacks occurred. He questions the value of such an anti-malaria measure except under very special conditions.

Rawnsley(8) states that his quininized soldiers, although not reporting for illness, began to exhibit large spleen, anemia and cachexia.

Treadgold basing his opinion on experience with the allied armies in Macedonia, believes that quinine taken daily over periods of several months tends to increase the severity and chronicity of malaria attacks.

Stitt (9) holds that preventive quinine renders the patient less amenable to the curative action of the drug in case of an attack and makes him more liable to relapse.

On the other hand, we find authors who

hold that the suppression of a clinical attack may be an advantage, although the latent infection remains uncured.

In a measure, the explanation of the contradictory nature of the evidence in the matter of latency may be found in the varying physical condition of the patients and in the varying length of time over which the preventive treatment had to be extended. There is a growing belief, not at present universal, that the chief action of quinine is not direct as a parasiticide on the malarial organism, but indirect—through its effect on the system, releasing or stimulating the natural resistance of the body. Persons who have suffered much from hardships, poor nourishment or the effects of other disease might react poorly to preventive as well as to curative measures. Quinine lacks its natural ally and may be unable to cure or even hold down a latent infection. Again, a timely change of season, climate or conditions of living may intervene to reinforce the bodily resistance and eventually overcome the latent infection. On the other hand, should the patient remain exposed to mosquitoes in a malarious district his latent infection might be complicated by a new infection with a different species of parasite. Preventive treatment has apparently succeeded in regions where malaria is sparse, while the same dosage has failed where the disease is plentiful.

The conditions under which preventive treatment is carried out certainly have much to do with the result, or apparent result; and we see why a "prophylaxis" in a native people relatively immune to malaria or in a settled population in a temperate region may justly or unjustly get a good deal of credit, while the same procedure among troops or pioneers in a highly malarious region may totally fail.

I do not attempt in this short paper to consider in detail every phase of a problem so complex as that of preventive quinine The differences in species of malaria parasite; the effect of repeated infections; dosage of quinine and intervals betewen doses; possible adverse effect of long-continued cinchonization; difficulties of administration, especially in communities; climate; expense, etc., have been considered by the authors with varying opinion. I will emphasize only certain important and universal principles which may best harmonize many conflicting findings. These I summarize briefly:

1. Quinine is preventive chiefly, if not wholly, through its action on an infection already acquired. Such action may be exhibited, favorably through curing incipient infections, and, with less claim to advantage, through masking an infection and rendering it latent. 2. The better the resistant power of patient or population through acquired immunity, or through favorable conditions of life, individual or climatic, the more credit preventive quinine is likely to win. 3. Preventive quinine finds its most useful employment, possibly its only useful employment, when faithfully administered to individuals or groups of person for limited periods of time and only during exceptional exposure to infection.

An interesting corollary grows out of this abundant literature on quinine prevention of malaria. The authors are, in almost every case, men who have had wide practical experience with malaria and who speak from first-hand knowledge of the subject—they viewed the field from the saddle, not from the desk; yet we find this great divergence of opinion among them on a matter which, to a tyro, might seem easy of solution. We are made to realize more fully that in working with malaria we are dealing with a disease highly variable both in the individual and in the community; we must have controls and a most careful analysis of our findings if we are to draw any valid conclusions from our observations. A report to the effect that a patient or a community was treated and got better is likely to add little to our knowledge of the cure of malaria unless we can justly eval-

uate the different factors concerned in our research. This statement has particular force in considering the results of any preventive measure in a country like this where malaria, like the price of cotton, has its ups and downs; and we have to be especially careful in evaluating our favorable results in those happy communities where malaria is on the decline whether treated or not.

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DISCUSSION.

Dr. C. P. Coogle: There is no one present who enjoyed Doctor Barber's paper more than I did. I have had the pleasure of reading this paper before the meeting and must say that it is a very good review of the recent writings of our best scientists on this subject. Special mention has been made of the many contradictory opinions on the use of quinine as an agent to prevent clinical attacks of malaria. There seems to be no difference of opinion, however between the National Malaria Committee, The International Health Board and the United States Public Health Service, relative to suggesting to the public to take quinine to prevent malaria. They have agreed on a scale of dosage and call it the Standard Quinine Treatment. The State Boards of Health of all the southern states are spending money to spread propaganda among their people. It must be of interest to all of us to know whether or not the Standard Quinine Treatment is based on a scientific study of this subject.

Just what effect quinine has on the malaria parasites, or how it acts, I don't know. It is my opinion the real phenomena of its action has not been discovered as yet. Until recently, the most of us field workers were led to believe that quinine was the only drug that actually killed the malaria parasites in the human, now we are asked to believe that quinine does not kill a single parasite, but acts in some unknown way as stimulating certain antibodies or hormones, or something like that. The public does not understand this and neither do I, certainly quinine acts in some way, this is apparent from the preponderance of evidence based on testimonials of millions of people who have taken various and sundry drugs to keep off malaria. It would seem that the laity has more confidence in quinine than the physician and quinine seems to be more trusted by the physicians than by the scientist.

Doctor Barber has wisely agreed with all the writers in his summary: Quinine is a good drug to prescribe but it is no good at all when put to a test by scientists.

Doctor Barber quotes Treadgold as saying: "The benefit derived from the use of prophylactic quinine varies directly as the resistance of the individual taking it," that is, the greater the resistance the better the statistics." Of course, we would expect the resistance powers of all well nourished persons to help keep off disease attack.

My experiences have been that the benefits derived as a preventive of clinical attacks of malaria varies directly as the numbers increase in bottles of chill tonic or packages of quinine the individual takes. That is, the more chill tonic or quinine or Standard Quinine Treatment a rural population takes, the less the malarial attacks, and certainly the fewer working days lost from the field.

The foremost question in my mind is: Are chill tonics and quinine and the Standard Quinine Treatment oversold to the people or do they really get results?

Dr. C. M. Shipp (Bay St. Louis, Miss.): I have enjoyed Doctor Barber's paper very much, having had the pleasure of reading it beforehand. I will not be so bold as to put my head in a loop for a man who has had such splendid training as Doctor Barber, but when it comes to making a statement as a general practitioner, that is a different thing. When you put your head up towards the firing line of science you had better look out. These men follow cases with the microscope and it is difficult to say when a case of malaria is really cured.

I was struck with the statement made by Yorke and McFie, in regard to the transmission of malaria where cases had been treated by giving prophylactic quinine 10 grains a day beginning five days prior to the infection, and 10 grains even on the day the case was inoculated with the sporozoites. Why is there so much confusion on this matter? There are some very perplexing problems. We find a man who on the 13th will have a chill, on the 15th another, on the 17th another, and then perhaps another—every other day—and then it will subside. The next time he

has attacks they may be on the even days instead of the odd. Why? We do not know. Sometimes we find a patient who will have a chill one day at 12 and the next day it will be two and a half hours later, and then perhaps two and a half hours earlier. Why? We do not know.

The Doctor referred to the work that the British have done, and they have done a remarkable amount of work since the war. We have gotten from them some valuable things relative to the action of quinine. We know where it is absorbed and about the time. We know it stays only a short time in the blood stream and in about 20 to 30 minutes it is excreted in the original form. We do not know whether it is the toxic action of the drug or physiological action.

I have seen people take prophylactic quinine for five months. Some were infected during that time, but the infection did not always remain. Some of the people were infected throughout the experiment, and we have just as many cases of malaria after they had taken the prophylactic quinine as before. Certainly I do not think we will get very far with prophylactic quinine. The progress we will make in cures will be with the early simple infections by the malaria plasmodia.

Dr. M. A. Barber (closing): It must be emphasized that our subject has to do with preventive quinine, not with quinine as a cure—everybody will concede that quinine is an excellent thing in the treatment of malaria and the more cheaply and abundantly it is at hand the better.

As regards the question of the "practical" and "impractical" in science. The most impractical thing in the world is work conducted without proper controls or accurate records. The matter of "prophylactic" quinine offers a good illustration of the fact that years of observation by "practical" people may leave a subject in a very hazy condition.

A PRACTICAL PROGRAM FOR A PART-TIME COUNTY HEALTH OFFICER.*

W. H. FRIZELL, M. D.,

Health Officer, Lincoln County,

BROOKHAVEN, MISS.

There are so many different things, so many different viewpoints, from so many different angles, to be considered in planning to build a practical program for a part-time county health officer, that one hardly knows where to begin. It would be easy enough if there were ideal conditions in the county—and in all the counties. These like conditions would make possible a stereotyped program applicable to all communities.

But we are far from such conditions, even different portions of one's own county are widely unlike, much less adjoining counties or widely separated portions of our state. These together with climatic and seasonal changes make the program both varied and difficult. Furthermore we have various peoples to consider, therefore various kinds of County Officials to deal with in consummating this program.

When these features have been sufficiently studied one can begin to formulate his program in the rough—to be many times revised.

First, it must be founded along the most common-sense lines, systematic and constructive, to the end that you may follow on to reach the specific goal. May I here preface this division by saying that the County Health Officer himself should be chosen advisedly, that these ideals may have birth. For he should be a man of high ideals, of convictions and with an altruistic spirit,—one who has a vision of bettering mankind and improving the race, that future generations may show the proof of his dreams.

In further shaping this program the people must be studied, their most imminent needs considered. Tact must be used in acquiring this information. The Health Officer must gain the confidence of his people in his sincerity of purpose as well as in his ability to cope with Public Health questions. Then the formidable Board of Supervisors must be given no mean bit of attention, individually and collectively. Their ear and hearty co-operaton must be acquired to the end that the salary sufficient

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to warrant the time and expenditure of effort on the part of the C. H. Officer to carry out a program worthy of the name, may be realized. It is just as necessary that he devote sufficient time to effectual work as it is to plan, and to do this he must be remunerated at least for a goodly portion of his time. Once you have the confidence of your Board of Supervisors you will usually find them to be very fair fellows—men who will go as far as the finances of the county will warrant. With all these things met and overcome the program for the work can be very intelligently planned.

The program must of necessity be graded, to be educational, even in the best of counties—counties where the greatest intelligence is found among its citizens; and it is in these counties that the ideal program can be used, the conditions can be improved, so much the more then should the program be graded in the poorer and less intelligent communities.

It must be systematic to the end that it may be followed. To obtain the best results it should embrace at least three years of arduous work, beginning with the very rudiments of Public Health, and progress with the plan as your people show advancement. It must begin with basic principles of good health, improving sanitary conditions, thereby creating a better environment, hence its educational value. Here you can attain the end results by a system of lectures to the young people, chiefly in the public schools, first the "a, b, c's" of health, keeping fit, care of the mouth, teeth and person, the proper diet, foods that will build the body and mind of the growing child, screening, etc., as preventive measures against seasonal and infectious diseases. I find that they accept instruction without question much more readily than do the grown-ups. It is in this way and among the young people that you can build up the enthusiasm requisite to carry on the propaganda that bears fruit in years to come. In order that you may get the best results from this graded, educational program, these lectures should at first be very simple or primary in character, later becoming academic, and as conditions improve the real cap-sheaf work can be put on in permanent improvements done in the way of better sanitary conditions in public buildings, drainage, etc.

Next, the proper amount of community co-operation will materially assist in perfecting the plan by giving its assent to prophylactic measures against contagious and infectious diseases, by general vaccinations and inoculations. These things are not accepted wholeheartedly by the public everywhere, therefore they must be educated to this measure. This can be materially aided by the employment of the proper Public Health Nurse; and by the way, this is a large and promising field for graduate nurses. She should be chosen wisely or the plan will be an utter failure. She can render invaluable assistance in the followup work which should be prosecuted vigorously.

This latter feature will largely depend upon the financial condition in your county, the personality of the nurse, and the thoroughness of the program. It requires so much time, labor and perseverance on the part of the County Health Officer to get and hold the minds and attention of the people on public health work. It is so difficult to draw their attention away from their other problems in life so engrossing their every attention, that the part-time health officer can not devote to his work the time necessary to accomplish the ends planned for in his program, hence the necessity of a nurse for intelligent and effective work.

This now leads us to the climax of the field of a *good* part-time County Health Officer, namely, the planning, prosecuting and putting into final consummation a work that leads to the point where the "pupa-County Health Officer" emerges into the full-fledged whole-time County Health

Officer. Thereby he realizes the dreams of every true, zealous and altruistic Health Officer in planning his program as a part-time worker, in such a way that he may educate his county officials and his citizenry to the point where they can fully appreciate the true worth of the guardians of Public Health, in order that his office may be dignified to the extent that it be made a whole-time and efficient one.

To summarize, I would say that a practical program for a Part-Time County Health Officer should embrace the following:

First—The proper man for the place in Public Health work.

Second—A correct visualizing of the needs of the county.

Third—Getting the confidence and respect of his people and Board of Supervisors to the end that the salary be sufficient.

Fourth—It must be educational—graded and enthusiastic to suit conditions of intelligence and result from former work done in the county.

Fifth—It must be followed up and carried on to a point where he ceases to be a part-time officer, and automatically creates conditions where he becomes a full-time and efficient County Health Officer.

DISCUSSION.

Dr. F. C. Spalding (West Point): I do not know that I can add anything to what Doctor Frizell has said, as he has covered the matter very thoroughly, but as he stated in the beginning, it depends a good deal upon the conditions of the county in which you live and also on the financial condition of your county. What would apply to a Delta county will not apply to a hilly county, but I think the first thing we should try to do is to educate the people and get them to the point where they will insist that the Board of Supervisors appropriate sufficient funds. One thing about the supervisors. You go to them and they will listen to you and you think they are for you, but when it comes to a vote they will turn you down. We have been attempting this through our schools, teaching the older children and telling them to tell their parents; then we work through the ladies' organization like the Parent-Teacher Association, and we think we can accomplish much in that way. We had a Red Cross nurse a few years who went through our county and did a great work, and I think if we had not had a short crop that year we could have had a County Unit. Another thing was that it was election year and the Board was afraid to make an appropriation for fear they would not be re-elected. But the main thing is to educate the people as to what should be done and let them demand it.

Dr. W. E. Sharp (Pascagoula): Mr. President, I feel impelled, not because I can tell you anything that you do not already know, but because of the fact that I have gone through the various stages of development as described in this very splendid paper, to make a few brief remarks. Our experiences some times makes us feel like *going back* as James Whitcomb Riley says in a poem:

"I'm got the measles and the mumps and a new straw hat,
And I'm come *back* to where my beau lives at."

I started where many full time men have to start. One of the necessary prerequisites for "Public Health Work" for "Part time man" is to make up his mind that he is going to sacrifice from the beginning and possibly for a long time after—not only time but money, because it will often cost you more money to function as a HEALTH officer in a way satisfactory to your self, than the meager salary so often paid for a "part-time health officer."

I had this experience myself. I was drawing a salary of $25.00 a month, and when I counted up, I was spending almost double what I was getting as salary in expense—to say nothing of the loss of time from my private practice. *I did this cheerfully because I liked it.*

Getting back to fundamental principles, I found one of the greatest problems was *educating* the people and heart-to-heart talks with the officers (*Board of Supervisors*). They hold the purse strings and they hold them pretty tight some times.

But the way we got it over, was to go into the schools, and teach the children and advise, and if they wanted to become strong, healthy, robust men and women, certain things ought to be done. Finally, we got their interest aroused, and through them, their parents. This having been accomplished, the rest was easy.

We now have a full time Health Department. Our Board of Supervisors are squarely behind it as are all the church, civic organizations of the county, and the towns.

But gentlemen, it is a question of Education, Patience and Sacrifice.

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DR. ALDO CASTELLANI

It is with great pleasure that THE JOURNAL welcomes to our midst Prof. Castellani who comes to organize and head the School of Tropical Medicine at Tulane. Occupying as he does such status, that most authorities rate him as the leading spirit in the field of tropical medicine in the world today, Tulane is indeed to be congratulated upon having prevailed upon him to accept a chair in its Shcool, and it is hoped that he may decide to settle down permanently among us.

Professor Castellani graduated in medicine, with the highest honors, from the University of Florence, Italy, in 1899. He then went to Bonn, Germany, to study under Professor Kruse; later going to the Lister Institute, London. While still a student in Florence he devised the "dilution method" of growing bacillus from blood. During his stay in Bonn he devised the "absorption method" for the determination of closely allied bacilli and for the diagnosis of "mixed infections."

In 1902, while at the London School of Tropical Medicine, he was selected by the British Foreign Office, at the recommendation of Sir Patrick Manson and Sir Ronald Ross, to go to Uganda to investigate sleeping sickness. There he found a *trypanosome* in the cerebrospinal fluid of sleeping sickness patients and connected it with the etiology of the malady. His researches were confirmed and greatly elaborated by Sir David Bruce and Dr. David Nabarro.

In 1903 he was appointed professor of pathology, and a little later professor of tropical medicine and lecturer on dermatology, at the Ceylon Medical School. He was also director of the Bacteriologial Institute and Clinic for Tropical Diseases, and physician to the Seaman's Ward, General Hospital, Colombo. He remained in Ceylon and held these appointments until 1915. During that period of time he carried out several investigations, found the microorganism of yaws, at that time the most important disease of Ceylon; described several new diseases and their causative organism (as broncho-spirochaetosis, new forms of bronchomycosis endemic funiculitis, copra itch, etc.); prepared and used the mixed vaccines (TAB; TABC) which later on, with slight modifications, were adopted by all the Allied Armies.

In 1915 he accepted the professorship of Tropical Medicine at the Royal University of Naples, but after a very short time joined the Italian Navy Medical Service, was lent to the British in the Balkans, and in 1917 was placed on the Interallied Sanitary Commission with headquarters in Paris.

In 1918 Sir Patrick Manson asked him to join the staff of the London School of Tropical Medicine and he then resigned his Naples professorship and settled down in London. Later he accepted the directorship of Tropical Medicine in the Ross Institute. For services rendered during the World War, etc., he received the C. M. G. from the British Government, the Legion of Honor (Officer) from the French Government, the Italian Military Cross and the Crown Italy (Grand Cross) from the Italian Government, also various decorations from Serbia and Poland. Since the War he has continued to do some research work in addition to teaching and doing consulting practice. For instance, he found a mycological method for the detection of various sugars and other carbon compounds; has found some new fungi, a new treatment for dermal leishmaniosis, etc. In all, his contributions to medical literature number some four hundred, and his Manual of Tropical Medicine, which he wrote jointly with Dr. Albert Chalmers, has reached the 3rd edition and the 4th edition is now in preparation.

DR. ALDO CASTELLANI

This, very briefly told, gives one some idea of the life work, so far, of the new head of the department of Tropical Medicine of Tulane. Again we welcome him to Tulane and to New Orleans.

He obtained his F. R. C. P. (London) in 1921; his M. R. C. P. in 1916.

He was born in Florence (Italy) September 8th, 1876; married Miss Josephine Ambler Stead in 1906.

MARCUS FEINGOLD.

The profession suffered a distinct loss in the recent demise of our beloved colleague Dr. Marcus Feingold. His international reputation as an ophthalmologist brought glory both to Tulane and to New Orleans. His character, made noticable chiefly by those cardinal traits modesty and simplicity, his insatiable love of his work, his charity to all worthy of it, his scholarly efforts in the realms of research—these are but some of his attributes.

Dr. Feingold was born in Botoshani, Rumania, in 1871. He received his preliminary education in the Austrian gymnasium and in 1896 was granted his doctorial degree, *cum laude*, from the University of Vienna. In 1897 he came to New Orleans and within a year founded a special clinic at Touro Infirmary. He became professor of ophthalmology at Tulane in 1906.

A devoted pupil of Fuchs, often appraised the greatest of all ophthalmologists, it was but fitting that Dr. Feingold should act as his host during the visit of Prof. Fuchs to the United States in 1920.

DR. MARCUS FEINGOLD

He was a fellow of the American College of Surgeons, member American Academy of Ophthalmology and Oto-Laryngology, Chairman of Medical Staff at Touro Infirmary; was the delegate of this country to the International Congress recently held in London, and also delegate to the late German Ophthamological Congress in Munich. He served for many years as Senior Ophthalmologist to Charity Hospital and did much in upbuilding this field at an institution which has ever done so much for the poor of our State.

Dr. Feingold was a most prodigious reader and early had mastered French, Spanish, Italian and English as well as his own German. His library is accredited as being one of the finest anywhere and it is most fitting that it should have been the owner's wish that his books should go to Tulane.

In 1904 he was married to Miss Bertha Lowenberg, who, with a daughter Rose Evelyn, and a brother Meyer W. Feingold of New York City, survive him.

Broad in all his beliefs, liberal in all his teachings, and never trespassing upon the feelings of others, he had a sympathetic understanding of men.

He died December 26, 1925.

"GIVE 'EM A SQUARE DEAL."

Under the above caption, the Jackson Daily News of December 17, 1925, ran an editorial in which they spoke of the opposition of the Mississippi State Medical Association, and the Mississippi State Board of Health to a bill to be offered in the opproaching session of the Legislature, creating a State Board of Chiropactic Examiners.

Of course, Brother Sullens is speaking of giving the chiropractors a square deal. Do not infer that he is thinking of the "dear peepul." It is a strange thing that during a political campaign so many editorial writers and so many politicians want to tell you what they are going to do for the "dear peepul", but when the time comes to get down to actual work, there is usually some special interest to be looked out for. We feel certain that it is nothing more than a mistaken idea of what chiropractic really is that leads our lay-contemporary to arrive at the conclusion that there is any-

thing worth while to chiropractic. Furthermore, we feel certain that he honestly believes that "chiropractors can and do cure certain ills to which human flesh is heir, and its followers are entitled to follow their profession without molestation from the disciples of any other school of medicine."

In the first place, at this point, let us inform Brother Sullens that in modern scientific medicine there is no such thing as different schools of practice. This idea that different schools of medicine existed was originated in modern times by the homeopaths, who not only coined their own name, but coined the word "allopath," as well. No physician today worthy of the name wants any other label but that of physician. Being a thorough seeker after knowledge, he is ready and willing to accept and make use of any discovery regardless of its source. But, in each instance, the medical profession insists on the right to investigate the worth of any discovery or method of healing before it be adopted. Almost everyone is familiar with the accusations that were made against the medical profession when they failed to see any merit in "Friedman's Turtle Serum", several years ago. More recently, many laywriters, as well as charlatans, saw fit to fight the medical profession because the doctors found that Dr. Abrams' electronic reactions did not do what he claimed for them.

Now, let us consider the question of the claims to cure. We do not question the honesty of our lay-brothers, neither do we question the honesty of the rank and file of the chiropractors when they say that they have cured patients. But the test of a cure is the time that a man stays "cured." After a patient leaves the chiropractor's office with the statement that he feels better, how many of these "healers" interest themselves enough to check up on their results later on?

No one would think of denying the people of Mississippi the right to choose any method of treatment they wish, but, on the other hand, the State Board of Health is charged with the task of protecting the health of the people of Mississippi and it is its function to see, so far as may be possible, that epidemics of diphtheria, smallpox, scarlet fever, are not allowed to gain a foothold in any place because valuable time was wasted in rubbing someone's spine when the patient should have been prevented from mingling with other people and should have had serum, or other treatment, administered to cut short the disease.

Many a patient who has tuberculosis, if given appropriate treatment at an early date, would be restored to health and a life of productive activity if seen in time. But when such a patient falls into the hands of a "healer," who has not more knowledge of the anatomy of the human frame than the patient himself has, then the sufferer is quite likely to find himself in a stage that necessitates spending the rest of his life as an invalid.

As a rule, it is a well-known fact that there is seldom anyone to fight for the interests of the people at large. "Everybody's business is nobody's business", and that probably explains why thirty-two out of the forty-eight states of the Union have passed the bills that the chiropractors ask for. Let us remind Brother Sullens that a large majority of the people may sometimes be mistaken. Everyone thought that the world was flat before Columbus made his well-known trip across the Atlantic.

Now, Doctor, get into the game and help things—not by having your Society pass resolutions, but by writing an individual letter to your senator and representative at Jackson TODAY!

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of January there was held a joint meeting of the Old and New Boards of Directors and the Annual Installation Meeting. The Scientific Meeting scheduled for January 25th, was called off by the President as it conflicted with the Sectional Meeting of the American College of Surgeons held on the 25th and 26th of January.

The Committee on Revision of By-Laws has drawn up a new set of By-Laws for the Society which will be acted upon by the Board.

Dr. Harry L. Zengel was elected to active membership in the Society.

Dr. Marcus Feingold died during the month of December.

The Annual Meeting held January 11th, 1926, was called to order by Dr. Urban Maes, the Retiring President, with the Secretary, Dr. Lucien LeDoux, at the desk.

The Annual Report of the Secretary, Dr. Lucien LeDoux, was read, accepted and referred to the proper committee.

The Annual Report of the Treasurer, Dr. John A. Lanford, was read and referred to the proper committee.

The Annual Report of the Librarian, Dr. Daniel N. Silverman, was accepted and referred to the proper committee.

The Annual Reports of the Scientific Essays, Judiciary, State Medicine and Legislation, Auditing, Condolence and Publication Committees were read and accepted.

Dr. Urban Maes, Retiring President, made his final report to the Society. Dr. Maes then turned the gavel over to Dr. Maurice J. Gelpi, the new President.

As is the custom every year the Society presented a bouquet of flowers to the new President's wife, but as Mrs. Gelpi was ill Dr. Gelpi was given the flowers for Mrs. Gelpi in the name of the Society.

Dr. Gelpi read his Inaugural Address which was very well received.

Dr. Gelpi then introduced the Annual Orator, Dr. John H. Musser. His address was on "Co-operation in Medicine."

Then followed the Installation of the following Officers:

Dr. J. Birney Guthrie, First Vice-President.
Dr. Marcy J. Lyons, Second Vice-President.
Dr. E. J. Richard, Third Vice-Preisdent.
Dr. H. Theodore Simon, Secretary.
Dr. John A. Lanford, Treasurer.
Dr. Daniel N. Silverman, Librarian.

Additional members of the Board: Dr. Jules E. Dupuy, Dr. Urban Maes and Dr. L. Maurice Provosty. All of the new Officers said a few words in appreciation of their election.

Dr. E. M. Ellis, President of the Louisiana State Medical Society, who was in the City for the evening made an informal address before the Society.

Dr. Gelpi announced the following Chairmen of the Standing Committees:

Dr. Chas. Chassaignac, Chairman, Judiciary Committee.

Dr. Emmett L. Irwin, Chairman, Scientific Essays Committee.

Dr. Foster M. Johns, Chairman, Auditing Committee.

Dr. A. E. Fossier, Chairman, Hospital Abuse Committee.

Dr. Homer Dupuy, Chairman, State Medicine and Legislation Committee.

Dr. A. C. King, Chairman, Condolence Committee.

The Chair then introduced Dr. Aldo Castellani, the newly appointed member of Tulane University as head of the Department of Tropical Medicine. Dr. Castellani said a few words to the members in appreciation of what had been done for him since he came to New Orleans and how glad he was to be here.

Dr. Gelpi then announced that after the meeting there would be refreshments and dancing in the green room.

Report of Treasurer for December.

Actual Book Balance: 11/30/25	$220.04
Receipts during December:	871.44
Total Receipts	$1,091.48
Expenditures:	607.33
Actual Book Balance: 12/31/25	484.15
Outstanding Checks:	5.00
BANK BALANCE: 12/31/25	489.15

Report of Librarian for December.

Two bibliographies have been prepared during December on subjects as follows:

Intraligamentous Pregnancy (for Dr. Walter E. Levy).

Spinal Anesthesia and Analgesia (1921-25) (for Dr. P. Graffagnino).

Forty-nine volumes have been added to the Library, thirty-three of these were journals re-

ceived by binding, 15 were from the New Orleans Medical and Surgical Journal and one was by gift. In addition to these, Dr. Maurice J. Gelpi very kindly donated to the Library, 63 volumes, among which are about 12 volumes of bound journals.

Among the accessions of the month, a list of the volumes of recent date is as follows:

New Books—Dec. 1925.

Brodhead—Approaching Motherhood. 1925.

Graham—Empyema thoracis. 1925.

Duke—Allergy, asthma, hay fever, etc. 1925.

Turner—Personal and community health. 1925.

Sansum—Normal diet. 1925.

Hannum ed.—Eyesight conservation survey. 1925.

Copher—Methods in surgery. 1925.

Codman—Bone sarcoma. 1925.

Beaumont—Recent advances in medicine. n.d.

Boyd—Preventive medicine. 1925.

Pottenger—Symptoms of visceral disease. 1925.

Hirst—Manual of gynecology. 1925.

Dorland ed.—American illus. medical dictionary. 1925.

Jordan—General bacteriology. 1925.

Ballenger—Diseases of the nose, throat and ear. 1925.

Southern Surgical Association Transactions. 1925.

H. THEODORE SIMON, SECRETARY.

THE BERIBERI QUESTION.

An expert on health conditions in the Far East, Dr. van Driel, protests against proposed legislation against polished rice. It would raise the price of rice and rouse the antagonism of rice-growing countries and rice-eating people. The efforts should be directed to teaching and making available the use of other foods with the rice.

Dr. Frank A. Walke, of Shreveport, was recently elected President of the Americal Railway Surgeons' Association.

TRANSACTIONS OF LOUISIANA STATE MEDICAL SOCIETY

H. Theodore Simon, M. D., Associate Editor.

LOUISIANA STATE MEDICAL SOCIETY BULLETIN.

The fact may not be known to all members of our State Society that we have just completed in numerical strength, one of our most successful years, having enrolled the largest membership in 1925 the State Society has ever enjoyed. While we had looked forward to having more members in 1925, yet a total enrollment of 1234 showed a substantial increase over 1924. From the rolls of the State Board of Medical Examiners, we find that there are some 1800 physicians residing and registered in Louisiana, most of whom are eligible for membership in the Louisiana State Medical Society. We have therefore yet to include in our membership, some 550 physicians in Louisiana.

While we have been able to accomplish much for the members of the State Society, there are a great many other projects which if they could be satisfactorily developed would result in great benefit to each member. To accomplish some of these, we need the whole support and aid from all the physicians of Louisiana. With the development of our organization, there is an increase of responsibility. The physician owes it to himself and to his profession to join forces with our organization, and thus become a part of whatever progress is made by organized medicine.

The officers of the Louisiana State Medical Society have and will give their fullest support and energy toward bringing the State Medical Society to its fullest usefulness, and help to fulfill their function.

In co-operation with the Scientific Essay Committee, an unusual program is being prepared for its members and those in attendance at the Monroe Meeting. The Committee of Arrangement of the Ouachita Parish Medical Society, represented by some of the most influential and important men of our profession, have entered into the problem of arranging for the most successful and largest attended meeting of the Society. The proximity of our meeting dates to that of the American Medical Association in Dallas, and the close railroad connections between these centers, offers added opportunities for those wishing to avail themselves of same. These activities are all being developed in order that the members of our profession may be afforded all the opportunities for scientific advancement. We hope those who are enjoying same will see that their fellow practitioners who are not yet members of the State Society will be urged and requested to join either before or at the time of the Monroe Meeting. The total enrollment of physicians in the State Medical Society could easily be accomplished by each individual member of the State Society using his influence upon those physicians in their localities who are not now enjoying the benefits of same.

The following are Chairmen of the Scientific Sections for the approaching meeting of the Louisiana State Medical Society in Monroe, April 15th, 16th and 17th:

Medicine and Therapeutics—Dr. J. B. Vaughan, Monroe.

Pediatrics—Dr. Louis I. Tyler, Baton Rouge.

Nervous Diseases—Dr. H. R. Unsworth, New Orleans.

Bacteriology and Pathology—Dr. A. A. Herold, Shreveport.

Public Health and Sanitation—Dr. W. H. Seemann, New Orleans.

General Surgery—Dr. Lucian Landry, New Orleans.

Gynecology and Obstetrics—Dr. T. B. Sellers, New Orleans.

Eye, Ear, Nose and Throat—Dr. W. R. Buffington, New Orleans.

Urology—Dr. M. H. Foster, Alexandria.

Radiology—Dr. G. C. McKinney, Lake Charles.

Those desirous of reading papers, should communicate with the various chairmen as promptly as possible. The program for each Section must be in the hands of the Secretary-Treasurer not later than February 15th.

The following is the personnel of the various committees having charge of the arrangements for the Monroe meeting:

Committee of Arrangement:: Dr. T. E. Wright, Chairman; Dr. J. Q. Graves; Dr. R. W. O'Donnell.

Advisory Committee: Dr. F. C. Bennett, Chairman; Dr. P. L. Perot; Dr. C. P. Gray.

Finance Committee: Dr. J. B. Vaughan, Chairman; Dr. J. Q. Graves; Dr. Geo. W. Wright.

Entertainment Committee: Dr. D. I. Hirsch, Chairman; Dr. J. B. Vaughan; Dr. T. E. Wright.

Committee on Exhibits: Dr. R. W. O'Donnell, Chairman; Dr. C. H. Mosely; Dr. R. W. Faulk; Dr. B. M. McKoin.

Committee on Hotels: Dr. A. G. McHenry, Chairman; Dr. DeWitt Milam; Dr. I. J. Wolf; Dr. C. U. Johston.

Committee on Publicity: Dr. J. E. Walsworth, Chairman; Dr. A. L. Peters; Dr. G. M. Snellings; Dr. J. H. Panky.

AN INVITATION.

To the Members of the Louisiana State Medical Society:

As President of the Ouachita Medical Society, I wish to call your attention at this time to the meeting of our State Society in Monroe, April 15, 16 and 17, and to extend to every member of our State Society a most cordial invitation to come to Monroe and partake freely of our hospitality. I am reminding you of the meeting at this time with the hope that every one who possibly can, will arrange so as to be with us in April. We want you.

Our various committees are actively at work and a program for your entertainment, both scientifically and socially, is being arranged at this time. The March and April numbers of this Journal will contain some important facts about Monroe and its surroundings. This information will be interesting and you may well look forward for same.. From this Journal you will also get full information about the "Monroe Meeting" which we intend to make the largest and most enjoyable ever held outside the city of New Orleans.

Monroe, Her doctors, Her people and Ouachita Parish look forward to April and await the opportunity of entertaining you.

Yours very truly,

Signed: C. P. GRAY,
Pres. Ouachita Parish Medical Society.

SPECIAL ATTENTION.

Dues for the Louisiana State Medical Society for 1926 should be paid in advance. Those members in unorganized parishes should send their $4.00 direct to the Secretary-Treasurer of the Louisiana State Medical Society, 1551 Canal Street. Medical Defense begins from the time the dues are received by the Secretary-Treasurer. Your prompt attention and co-operation is requested.

P. T. TALBOT, Secretary-Treasurer.

The Avoyelles Parish Medical Society met Wednesday night, December 9th, in regular session at Bunkie, La., and elected officers for 1926.

The Avoyelles Parish Medical Society is one of the oldest medical societies in the state, with a membership of 21, out of 23 registered physicians and surgeons, in Avoyelles Parish.

There were present as guests: Dr. J. E. Dousson, of New Orleans, State Registrar of the Bureau of Vital Statistics of the Louisiana State Board of Health, who spoke by invitation on Vital Statistics. Drs. J. T. Cappell, and M. H. Foster, of Alexandria, La., and J. W. Watson, of Baton Rouge, La., were also present.

A paper on Intravenous Medication was read by Dr. R. G. Ducote, of Bordelonville, La., and discussed by Dr. G. R. Fox, of Moreauville, La., also by the physicians attending the meeting, proving to be a very interesting and instructive subject.

The retiring President, Dr. Leonard Chatelain, of Bunkie, entertained all physicians attending the meeting at a luncheon at the New York Cafe of Bunkie, which was heartily enjoyed.

Before adjourning to meet in Marksville next February, as the guests of Dr. Walter F. Couvillon, the following officers were each elected by acclamation to serve for the ensuing year:

Dr. G. Randolph Fox, Moreauville, President; Dr. B. J. Lemoine, Cottonport, Vice-President; Dr. K. A. Roy, Mansura, Secretary-Treasurer; Dr. R. G. Ducote, Bordelonville, Delegate to the Louisiana State Medical Society; Dr. E. Stanley Matthews, Bunkie, Alternate Delegate.

EAST BATON ROUGE PARISH MEDICAL SOCIETY.

The regular monthly meeting of the East Baton Rouge Medical Society was held at the Alvis Hotel, December 9th, at 8 o'clock in the evening. A very good attendance was present. After the regular order of business a very interesting and instructive scientific session was enjoyed by those present.

Dr. L. Stirling showed a case of Popliteal Aneurism which he had operated upon using the Matas technique with very satisfactory results.

Dr. Edw. K. Hirsch showed a series of Pyelograms demonstrating various pathological conditions of kidneys and ureters, one case in which a nephrectomy had been done with very satisfactory results to the patient.

Dr. R. C. Kempt related a case of Pernicious Anemia with a large number of Estivo-autumnal organisms present in the blood, along with a positive Widal. This case failed to respond to any of the recognized forms of treatment, but made a complete recovery under the administration of Neo-arsphenamim.

Dr. W. R. Eidson reported the removal of a hairpin from vagina of a two year old child, which had been accidentally introduced by the child during the act of self-abuse.

Under the head of new business the subject of establishing a free Venereal Clinic to be maintained by local funds was discussed and the consensus of opinion of those present was that since the Federal Government and Louisiana State Board of Health found it impractical, a local clinic would not prove satisfactory and the funds not sufficient.

Parking spaces for doctors cars was also discussed and various ideas suggested. It was finally decided to interview the chief of police to see whether or not some special concessions were possible.

The retiring president, Dr. E. O. Trahan, urged upon the members the importance of larger attendance at all the monthly meetings and the more frequent reading of papers, not only locally, but throughout the surrounding parish and district societies.

Dr. C. A. Weiss also stressed this point and urged the formation of flying squadrons to read papers before the members of all surrounding societies, and urged the members to put their discussions in writing so that same could be sent to The Journal for publication.

The following officers were elected to serve for the ensuing year:

President, Dr. Robt. B. Wallace; Vice-President, Dr. W. H. Pipes; Secretary-Treasurer, Dr. S. D. Porter; Delegates, Drs. Lester J. Williams and E. O. Trahan; Alternates, Drs. W. R. Edison and G. W. Sitman.

The Rapides Parish Medical Society voted, November 25, 1925, to make a part of its constitution and by-laws a resolution to the effect that any member found guilty of prescribing any form of opium illegally, or of selling, trading or giving away his national prohibition prescription book to any druggist or individual, shall be expelled from the society. The resolution also disapproved of writing prescriptions for liquor for any purpose except medical in the treatment or cure of disease.

THE ST. TAMMANY PARISH MEDICAL SOCIETY.

The St. Tammany Parish Medical Society held its annual banquet and installation of officers on Friday, January 8th, at the Southern Hotel.

The 1926 officials are: President, Dr. F. R. Singleton; Vice-President, Dr. C. R. Farmer; Secretary-Treasurer, Dr. H. D. Bulloch (re-elected); Delegate to the State Medical Society, Dr. J. F. Buquoi; Alternate, Dr. A. G. Maylie.

In addition to the above, the following were present: Drs. J. K. Griffith, N. M. Hebert, J. F. Polk, R. B. Paine, W. L. Stevenson, L. R. Young with Dr. L. L Ricks, President of the Tangipahoa Parish Medical Society and Mr. D. C. Slocum, of Independence, as guests.

The water-covered highways leading into Covington prevented the attendance of a large number of guests.

Webster Parish Medical Society held its last quarterly of the year at 2 P. M. on Tuesday, December 15th in Minden. The election of officers for 1926 was held with the following result: President, Dr. J. B. Benton, Minden; Vice-President, Dr. J. D. Kilgore, Minden; Secretary-Treasurer, Dr. C. M. Baker, Minden.. Dr. B. A. Norman, Sibley, was elected Delegate to State Convention, with Dr. W. McDade, Minden, as Alternate. Dr. E. B. Godfrey, in charge of Parish Health Unit, put in his application for membership, which was accepted and will be acted upon at next meeting.

Scientific Program. Dr. R. T. Lucas, Shreveport, read a paper on Intubation in Laryngeal Diphtheria. Dr. J. E. Heard, of Shreveport, read a paper on the Diagnosis and Treatment of Intestinal Obstruction. Dr. E. B. Godfrey read a paper on the work of a Well Balanced Health Unit. These papers were all thoroughly enjoyed and well discussed. After adjournment all members were urged to pay their dues for 1926, which are now due.

Dr. Amedee Granger attended the recent meeting of the Radiological Society of North America held in Cleveland, Ohio.

On December 16th, Dr. Granger by invitation, read a paper at a joint meeting of the Chicago Medical Society and the Chicago Roentgen Ray Society, his subject being "The Radiographic Examination of the Mastoids." The Radiological Society of North America will meet in New Orleans in 1926.

Dr. Aldo Castellani, recently appointed Professor of Tropical Medicine in the School of Medicine, Tulane University, arrived in New Orleans on January 3rd, and began his duties as head of the School of Tropical Medicine.

In the recent official list of the State Board of Medical Examiners of Louisiana, there are listed 1,896 registered physicians of the State, of which 616 are residents of the Parish of Orleans.

Under the auspices of Tulane University, Dr. William Thomas Councilman, Emeritus Professor of Pathology, Harvard Medical School, gave a talk on "Medicine in China," which was followed by an address by Dr. Aldo Castelleni, recently appointed professor of Tropical Medicine, on "Some Tropical Diseases," on January 15th, at the Hutchinson Memorial.

DR. JONES MADE HOUSE OFFICER.

Dr. P. H. Jones, Jr., was recently appointed house medical officer at Charity Hospital, New Orleans. Dr. Jones is a graduate of Louisiana State University, class '16, and received his medical degree from Tulane in '20. He did research work in pathology at Oxford, from which institution he received his Ph. D. degree.

On December 30, 1925, the DeSoto Parish Medical Society held its regular meeting at Mansfield, under the presidency of Dr. H. W. Jarrell. After transaction of routine business, Dr. Herold, District Councilor, who was present by invitation, was called upon; he spoke a few words about the state society, urged a good attendance at the Monroe meeting, as well as the Fourth District Society meetings, after which he made a short scientific address. Election of officers for 1926 resulted in re-election of Dr. Jarrell as President and Dr. D. C. McCuller, of Mansfield, as Secretary; Dr. Tharp was selected as Vice-President; Dr. Jarrell was also made delegate to the State Society meeting. It was decided to meet quarterly in 1926. The Society then adjourned to a local restaurant, where luncheon was served.

Dr. Robert C. Campbell, a venerable physician of Shreveport, died recently. Dr. Campbell, a very learned man, who formerly enjoyed a large practice, had practically retired for the past few years. He had also been prominent in the diplomatic service of the United States, having served many years ago as a consul-general. The Shreveport Medical Society membership was named as honorary pall-bearers at his funertl.

An innovation at the Shreveport Charity Hospital is "ward walks," once a week, by the entire medical and surgical staffs, respectively, all services being visited and the interestng cases, as well as those of doubtful diagnoses, being fully discussed by the entire membership, both resident and visiting.

The Clinical Congress of the American College of Surgeons for the state of Alabama-Florida-Georgia-Louisiana-Mississippi, met in New Orleans on January 25-26, 1926.

The program was as follows:

Hospital Conference:

Monday, January 25th.

James C. Willis, M. D., Shreveport, Presiding.

The American College of Surgeons and Its Relation to Hospitals:

Franklin H. Martin, M. D., Chicago, Director-General, American College of Surgeons.

Hospital Efficiency From the Standpoint of the Internist:

L. R. DeBuys, M. D., New Orleans, representing the American College of Physicians

Community Responsibility of a Modern Hospital:
Rev. C. B. Moulinier, S. J., Milwaukee, President Catholic Hospital Association.

Round Table Conference:

Conducted by W. T. Henderson, M. D., Mobile.
Extension of privileges to practice in the hospital.

(a) Should all doctors be entitled to hospital privileges without question on part of the authorities?

(b) If not, what is the proper procedure to adopt in extending privileges to doctors to practice in the hospital?

(c) What is the best means of preventing unnecessary incompetent surgery?
C. Jeff Miller, M. D., New Orleans.

Discussion opened by J. W. Barksdale, M. D., Jackson.

Consultations:

(a) How can we stimulate more consultations?

(b) What is the best method of requesting and recording consultations?

Gerry R. Holden, M. D., Jacksonville.

Discussion opened by J. M. Moseley, M. D., Shreveport, Superintendent Charity Hospital.

Organization of Ophthalmological and Oto-Laryngological Department in General Hospital.

Standardization of (a) equipment, (b) supplies, (c) procedure.

A. B. Harris, M. D., Birmingham.

Discussion opened by C. S. Lentz, M. D., Augusta, Superintendent, University Hospital.

Laboratory Service:

(a) The best method of providing laboratory service in small hospitals?

(b) What supervision should there be over the laboratory when there is no clinical pathologist available?

(c) Should a laboratory be self supporting?

(d) What system of charges is best to adopt?

George S. Graham, M. D., Birmingham.

Discussion opened by John D. Spelman, M. D., New Orleans, Superintendent Touro Infirmary.

Tuesday, January 26th.

Activities of the American College of Surgeons.
Franklin H. Martin, M. D., Chicago.

Election of Officers and Committees for ensuing year—Alabama, Florida, Georgia, Louisiana, and Mississippi.

This was followed by a "Round Table Conference."

The Louisiana State Board of Health at a special meeting recently adopted the Standard Milk Ordinance prepared by the United States Public Health Service and will sponsor with the hope every municipality will adopt the grading ordinance to insure a better and more wholesome grade of milk.

Dr. J. G. Martin submitted the November dairy report for Lake Charles to the State Board of Health. It shows 21 dairies producing milk with a bacterial count (under Grade A) varying from 1,000 to 31,000 bacterial count per c. c. The highest bacterial count of the Grade B dairies was 83,000. This is a good record and it is hoped others will follow closely the standard set by Lake Charles City Health Department.

The New Milk Ordinance for the City of New Orleans, written by the Board, of which Dr. E. L. Leckert was executive officer, and later approved and promulgated by his successor, Dr. W. H. Robin, Superintendent, and associates, was approved by the State Board of Health on the 14th of December with the request the regulations be advanced as rapidly as possible to conform with the regulations now sponsored by the Board and the U. S. Public Health Service.

Attractive reprints or booklets have been prepared by the Metropolitan Life Insurance Company for distribution in communities contemplating the adopting of the new milk regulations.

The Journal has noted with pleasure the election of Dr. Frank H. Walke, Shreveport, La., as President of the American Railway Surgeons' Association and also Vice-President of the American College of Radiology and Physiotherapy. Doctor Walke has been a hard worker and deserves the honor. We congratulate him.

On December 14th the State Board of Health authorized the purchase of a motor truck with necessary equipment, including electrical generator and mechanical exhibits that some may be sent to places with good roads where the railroads do not serve. On the initial trip demonstrations of producing and handling milk with a striking device showing the man who was properly nourished in early life "rings the bell" every time while his associates not properly nourished fail, will be made. There will be clowns calling attention to mottoes that are instructive and helpful in keeping well. Other features, relating to maternity and infancy work will be a part of the exhibit. The exhibit will attract attention and we feel sure will be greatly appreciated by the Public Schools and others interested in educating children to live healthful lives.

PRIZE HEALTH PLAY.

A prize of $100 will be awarded by the National Tuberculosis Association for the best health play written and presented by high school students, according to a recent announcement. Last year's prize play "Clean Up" has been printed by the Association, with words and music.

DIPHTHERIA CLINICS, BALTIMORE.

Baltimore has established 12 new diphtheria immunization clinics for the purpose of immunizing children before the age at which the disease is most fatal—from 2 to 5 years. The Municipal Journal reports that from 50 to 100 babies attend these clinics each week.

HARD-OF-HEARING CHILDREN, CHICAGO.

Fourteen thousand four hundred Chicago children have ear disease, and 1,000 are sufficiently deaf to need instruction in lip reading, if conditions found in 6 Chicago schools hold good in the city as a whole. Seven thousand five hundred and thirty-eight children were examined, and of this number 3.6 per cent were suffering from ear disease in some form.

AMERICAN BOARD OF OTOLARNYGOLOGY.

An examination will be held by the American Board of Otolaryngology in Dallas, Texas, on Monday, April 19, 1926, and in San Francisco, California on Tuesday, April 27, 1926.

Application should be made to the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

The United States Public Health Service has recently announced the release of strip film views illustrating lesions of syphilis and of skin diseases simulating syphilis. The preparation of these pictorial studies in such convenient and serviceable form was made possible through the courtesy of a number of eminent syphilologists and dermatologists whose private collections of photographs were used in making the strip film pictures. The views are taken from both acquired and congenital cases. They depict not only the usual genital and extra-genital lesions but a number of rare and unusual views are also shown.

According to the Surgeon General's announcement, the plan for using this new facility contemplates its distribution through the various State boards of health to medical societies, medical schools and hospitals. It is believed that the presentation of these views will prove an effective means of increasing the interest and assistance of physicians and others in the furtherance of the co-operative venereal disease control program. The Public Health Service is preparing a number of copies of each film so that each State Board of Health may be supplied. These films are not for sale, but are released to State boards of health for extended periods.

The Tenth Annual Congress on Internal Medicine will be held at Detroit and Ann Arbor, week of February 22-27, 1926.

The Congress is devoted to amphitheatre, bedside and clinical laboratory demonstrations as well as to symposia dealing with modern phases of internal medicine. Distinguished guests from abroad, Canada and the leading clinics of the United States will occupy prominent places on the program. Four days will be devoted to the work at Detroit, and one day the society will be the guest of the University of Michigan at the newly opened eleven hundred bed University Hospital.

All physicians who are interested in internal medicine and who are members in good standing of their local and national societies are cordially invited to attend the Congress.

Hotel headquarters will be at the Book-Cadillac in Detroit. Information regarding reduced railroad rates, program, hotel accommodations, etc., may be secured from the Secretary-General: C. G. Jennings, M. D., President, American Congress on Internal Medicine, Detroit, Mics. Frank Smithers, M. D., Sec'y Gen'l., 920 N. Michigan Avenue, Chicago, Ill.

IMPORTANCE OF HEALTH EXAMINATIONS.

The physicians place in the early detection of disorders and habits that eventually lead to serious degenerative conditions, such as heart disease, was discussed by Surgeon General Hugh S. Cumming, of the United States Public Health Service, before the annual meeting in December of the Seaboard Medical Association at Norfolk, Virginia. The subject of the Surgeon General's paper was "The Significance and Importance of Periodic Medical Examinations." This new health movement was characterized as significant from the standpoint of preventive medicine because it emphasizes the importance of the individual assuming a larger share of responsibility for his own health through utilizing the service of his physician for health promotion as well as for disease prevention.

RADIO HEALTHGRAM!

Directions: Use any wave length suited to your age. If you fade out, lose your breath easily, or sleep poorly, your wave length is wrong. You need to reset your health dial.

Good evening friends. I hope you are feeling fine and have lots of pep. If not, you need to tune in with some sound health rules, for the human body is like a radio set. We must be properly equipped and adjusted all the time; otherwise our apparatus works poorly and all we hear is static. Here are seven helpful rules to observe:

1. Keep your instrument properly set up. Stand upright. With your chin in, your chest out and up, and your stomach in.

2. Keep your battery working well. Take care of your heart. Don't let it get short-circuited by rheumatism or any other infection.

3. Don't shut yourself in an air-tight cabinet. Tune in with the oyxgen outdoors. Keep your windows open.

4. Spread out your antennae. Swing your arms and legs in the air every day.

5. Keep your loud speaker clean. Use a tooth brush at least twice a day, and go at least once a year to your dentist.

6. Keep your tubes in order. Don't abuse your digestive tract or let it get clogged up. Eat wisely. Drink plenty of water.

7. Finally see that your instrument is given an all-over inspection often enough to prevent trouble. Have a Health Examination by your physician each year.

INFANT MORTALITY DECLINES IN THE UNITED STATES.

A definite decline in the infant mortality rate in all racial groups during the six-year period, 1916-1921, is reported by Dr. J. V. DePorte of Johns Hopkins University as a result of his analysis of birth and death statistics for different racial stocks in the United States.

Dr. DePorte states that the decline has been both absolute and relative, reducing the degree of variation between the rates of the diverse groups. He found the differences in the rates of infant mortality of the several groups due primarily to differences in mortality from diseases of the digestive and respiratory systems, which are theoretically, preventable. Less change, absolute or relative, was found in the rates of mortality of infants under one month. The difference between the various groups in these rates very probably have a biological basis, according to Dr. DePorte, and, in this sense, may be termed racial.

CLINIC ON WHEELS, LOS ANGELES.

A complete clinic on wheels is the latest addition to the equipment of the department of health of the Los Angeles Board of Education. The clinic is provided with complete sets of optometrists' and dentists fixtures, thus eliminating the expense of furnishing these sets for the separate schools. By use of the movable clinics, two physicians and one nurse can look after the welfare of many children each day.

CHILDREN IN MOVING PICTURE STUDIOS.

Recent inquiries of the International Labor Office about the employment of children in motion pictures in various countries show the following facts: France has no special legislation regulating the employment of children in this industry, but provision of the general labor code apply; in Switzerland, the cinema industry does not exist; in Germany, an amendment to the child-labor law is proposed to cover the taking of public and private moving-picture films, and Berlin already has municipal regulations on this subject; in Great Britain there is no special legislation affecting children in such work and such employment is not common but certain provisions of the Education Act restrict the employment of children under 14 and give local authorities power to make by-laws prohibiting the employment of children in any specified occupation or regulating their employment generally; in the United States, the industry is concentrated chiefly in California and New York, where permits are required for the employment of children at this work.

CHILD LABOR IN CANADA.

Minimum age of 15 for permanent gainful employment during the school year is urged for Canadian children by the Canadian Council on Child Welfare. The council also urges prohibition of night work for minors under 18 and of employment in dangerous or unhealthful occupations of minors under 21, and an 8-hour day and 44-hour week for minors under 18.

TAX ON MEDICINAL ALCOHOL.

As part of its program of tax reduction, the House ways and means committee has agreed to recommend the repeal of the war tax on medicinal alcohol. The repeal of this tax has been urged for years by retail druggists, who insist that it is an unreasonable tax on their business. The committee has recommended that the present tax of $1.10 per gallon be reduced to fifty-five cents per gallon, beginning Jan. 1, 1927, and that the remaining tax of fifty-five cents be eliminated, beginning Jan. 1, 1928. Fixing an advanced date for the reduction and final elimination of this tax will permit the drug trade to dispose of their present inventories of drugs. Many druggists have large quantities of drugs purchased under the tax of $1.10 per gallon.

TRANSACTIONS OF MISSISSIPPI STATE MEDICAL ASSOCIATION

J. S. Ullman, M. D., Associate Editor.

Mrs. D. J. Williams, of Gulfport, formerly president of the Women's Auxiliary of the Mississippi State Medical Association, was elected president of the Southern Medical Auxiliary at the meeting in Dallas in November.

A recent social event in Gulfport was the reception tendered by the Women's Auxiliary to the Harrison-Stone Medical Association and the Woman's Club to Mrs. D. J. Williams, recently elected president of the Woman's Auxiliary of the Southern Medical Association.

At the regular meeting of the Harrison-Stone County Medical Society, held at the Woman's Club rooms, Gulfport, January 6, 1926, the following officers were enrolled:

Dr. D. G. Rafferty, Pass Christian, President.

Dr. Wallace P. Sheely, Gulfport, Vice-President, Harrison County.

Dr. S. C. Culpepper, Wiggins, Vice-President, Stone County.

Dr. D. J. Williams, Gulfport, Secretary and Treasurer.

Dr. E. H. Linfield, Gulfport, Censor.

Dr. R. A. Strong, Pass Christian, Delegate, Harrison County.

Dr. S. E. Dunlapp, Wiggins, Delegate, Stone County.

Following the installation, Dr. Thomas B. Sellers, of New Orleans, read a paper on "The Use of Insulin and Glucose in the Treatment of Vomiting in Pregnancy."

The many friends of Dr. H. M. Folks, of Biloxi, will be pleased to know that the doctor has recovered from his recent illness.

Resolutions commending the splendid work of Miss Inez Driskell, Red Cross nurse of the Adams County Chapter of the American Red Cross, were adopted at a special meeting of the Executive Board. Miss Driskell is leaving to accept a position as Public Health Nurse of Leflore County.

The Pike County Tuberculosis Association has selected Riverside lodge, ten miles east of McComb, as the site for the children's health camp to be held next summer for six or eight weeks. Children who are undernourished and underweight will attend the camp, and under the supervision of physicians and nurses every effort will be exerted to build them up. The State Board of Health is co-operating with the County Tuberculosis Association in the movement. This is the first county health camp to be organized in Mississippi.

At a recent meeting of the Warren County Medical Society the following officers were elected:

Willard H. Parsons, President.
Hugh C. Denson, Vice-President.
Sidney J. Harper, Secretary-Treasurer.

In the early morning of December 28th, the residence of Dr. W. H. Aikman, Health Officer of Natchez and Adams County, was almost completely destroyed by fire. The loss was partially covered by insurance.

At the meeting of the Homochitto Valley Medical Society on January 7th, a special Committee on Library Organization, with Dr. E. E. Benoist as chairman, reported good progress in the establishing of a medical library in Natchez, and it was decided to have the same centrally located so as to be easy of access.

There was a good attendance in spite of the weather being bad. Interesting clinical cases were presented by Drs. R. D. Sessions, Edwin B. Benoist, J. S. Ullman, and L. S. Gaudet.

At a meeting of the Jackson County Medical Society, the following officers were elected to serve for 1926:

Dr. E. T. Babindreer, Ocean Springs, President.

Dr. S. B. McIlwain, Pascagoula, Vice-President.

Dr. J. N. Rape (S. T. D.), Moss Point, Secretary-Treasurer.

The Committee on Legislation and Board of Censors was re-elected without any change.

Papers were read by Drs. Thompson and McArthur.

Dr. R. C. Cabot, of Harvard Medical School, in addressing the Honors Convocation at the University of Michigan, recently, in speaking of the difference between a true scholar and the ability to get high marks, among other things, said of the scholar:

"In the first place he must have a genuine, enthusiastic and unforced enjoyment of his task. He must have independence and a tendency to daring ventures. He must be marked by good sense and a sure instinct for what is insignificant. He must have a comprehensive mind capable of retaining the essential elements in what it has absorbed. And, finally, the true scholar must be cosmopolitan, he must be conscious of his kinship with other scholars in all parts of the world.

"Scholarship is a part but not all of a college education. The man who has been absorbing education has a tendency to impart it to others and then return for more. Scholarship is the making of plans and life the putting into effect of those plans. The greatest mistake that a man can make in life is to turn away from the path of his greater interest."

Dr. Cabot, in his final summing up, said that "the scholar looks before he leaps and, if he is the real thing, he leaps also."

It seems that it would be well for the physician to remember that he is a scholar after he leaves college.

The attention of the chairmen of the various scientific sections is called to the fact that the program must be made up by the Committee some time in February, if it is to appear in its proper form in The Journal before the meeting of the State Association. It therefore behooves the chairmen of the respective sections to see that the essayists give them the name of the subjects on which they are to speak or write at an early date.

Now that the various respiratory diseases are prevalent, it is to be wondered how many physicians are trying to teach their clientele how to avoid infection, and how many are continuing the old-time honored exhortations to "avoid getting the feet wet and keep out of draughts." It should be recalled that, while there is no objection to anyone making themselves comfortable by keeping dryshod, and warmly clothed, these precautions alone will not solve the problem of immunity and susceptibility to infection. It is well to remember, then, that if we quit fighting draughts and fight germs, we can do much to eliminate infectious respiratory diseases.

As the Legislature goes into session, it is well for the individual doctor to do his part in backing up the Mississippi State Medical Association Committee on Legislation by writing to their respective senators and legislators, endorsing the various bills that are being presented by our Committee.

No physician should feel content by merely giving a blanket endorsement and letting it go at that. There are other bills which need some opposition. Connecticut has shown within the past two or three years the folly of having more than one licensing board. It is to be hoped that the physician will point out to his legislator at Jackson the necessity of having only one Examining Board in Mississippi.

The chiropractor may claim that he has a different system, one that the medical man cannot understand. Failure to understand is not confined to physicians. No person of average intelligence who gives the matter unbiased thought could understand either. The main point is that, regardless of the system employed by the healer, it is still the same old human body, the same old anatomy and physiology, that must be considered.

THE DICK TEST—SCARLET FEVER.

The Dick test, which derives its name from its originators, Drs. George and Gladys Dick of Chicago, who are also the discoverers of the scarlet fever virus, consists simply in injecting very diluted toxin from steptococcus cultures into the skin. The susceptible child will show a more or less marked area of reddening of the skin at the point of injection within twenty-four hours. Those who are naturally immune will present only a red spot, indicating the point where the skin was punctured. Moreover, this minute spot shows no areola and disappears in a very short time.

The positively reacting children may be immunized by injections of diluted toxin, as already mentioned. It will then be found that the Dick test will react negative; in other words, an active and lasting immunity has been established. It is thought that this artificial immunity will last throughout the life of the individual, but inasmuch as the procedure has only been in operation for a few years, our supposition must of necessity lack conclusive proof.

Treatment, aside from diet and symptomatic medication, consists in using an antitoxin similar to that employed in diphtheric infectons. Excellent results have been obtained with the antitoxin

treatment and desperate cases have been saved by its use.

The anti-toxin is now on the market and can be obtained without any difficulty. Many lives will be saved by immunization and anti-toxin.

INTER-STATE POST GRADUATE FOREIGN CLINIC ASSEMBLIES, 1926.

The 1926 foreign clinic asesmblies given under the direction of the Inter-State Post Graduate Assembly of North America will cover a territory including the chief clinic cities of Italy, Switzerland, Germany, Austria, Czecho-Slovakia, Holland and Belgium.

The physicians are going abroad as the result of invitations extended, through this Association, by the leading medical universities and institutions of the countries to be visited to the medical profession of North America.

The members of the party will sail from New York on April 28th, a few days after the meeting of the American Medical Association at Dallas, Texas, thus, giving the physicians of the party plenty of time to attend this meeting.

Dr. Carl Beck of Chicago, the general secretary for the foreign assemblies is now in Europe completing the clinic arrangements for the assemblies. The clinic cities to be visited are as follows: Paris, Rome, Florence, Padua, Milan, Berne, Zurich, Munich, Vienna, Prague, Berlin, Amsterdam, The Hague, Utrecht, Leyden and Brussels. There will be extension assemblies held in all other principal medical centers of Europe following the main assemblies.

The assemblies are open to members of the profession who are in good standing in their State or Provincial Society with no restriction to territory. This invitation is understood to be extended to the entre medical profession of North America.

Admittance to the clinics and privileges of the tour will be protected by the issuing of an admittance ticket or card. This rule will be strictly enforced in order to protect the Association in its membership requirements, which is, that a physician must be in good standing in his State or Provincial Society. We will not be responsible or admit physicians to privileges unless they are members of the group.

It is necessary in order to hold space for the assemblies to send to the office of the Managing-Director, W. B. Peck, Freeport, Illinois, the sum of $65.00 per person. If for any reason the applicant for space decides that he can not attend the assemblies, the money will be refunded immediately, if this demand is made as early as six weeks before sailing time. A booklet of information pertaining to the assemblies and prices for same may be secured free of charge by writing the Managing-Director's office.

The officers of the assemblies are: Dr. Charles H. May, Chief Executive and General Charman, Rochester, Minnesota. Dr. Carl Beck, General Secretary, Chicago, Illinois. Dr. William B. Peck, Managing-Director, Freeport, Illinois. Mr. Reeve Chipman, Manager of Transportation, Boston, Mass.

A second section of the assemblies for a limited number will be conducted during the summer months for those who are unable to take advantage of the April sailing. The members of the party will leace New York S. S. "Pittsburg" on June 19th, return sailing, August 13th from Antwerp S. S. "Zeeland."

The Children's Bureau of the U. S. Department of Labor will issue early in 1925 a set of six charts on posture standards for boys and girls, intended for the use of physicians, nurses, physical-education teachers, and clinics.

Each chart is approximately 24x34 inches. A limited number of the charts are available for free distribution; others may be secured from the Government Printing Office at 50 cents for the set of six or 25 cents for the set of three charts showing standards for girls or the test of three charts showing standards for boys.

SHOULD RETARDED CHILDREN LEAVE SCHOOL.

A large army of incompetents, incapable of making any progress in the industrial world, is the result when children are allowed to leave school on completion of the sixth grade, according to a recent study of a group of Chicago children who were retarded in school and left at the end of the sixth grade. Ninety-five per cent of the children, however were found to be capable of making progress in school far beyond the point at which they left.

BOOK REVIEWS

Intravenous Therapy, its Application in the Modern Practice of Medicine: By Walton Forest Dutton, M. D., Illus. Philadelphia, F. A. Davis Co. 1925.

It is the opinion of most of the thoughtful men in the profession today that the blood stream is a sacred ground where no profane foot may tread excepting it be for an end that cannot be accomplished otherwise. Certain it is that today there are many things given to patients by this route that could be otherwise administered. It may be that some are kept from using intravenous therapy, lest the emoluments of the situation find a way to influence judgment.

There can be no doubt but that intravenous therapy will ever have a distinct place of its own in medicine, with none to dispute; but let us seek to use it with judgment born of the necessities of the case, rather than to find a way to use it as a method of preference.

It is noteworthy that in all extensive chapters describing transfusion of blood, the author fails, except in a mention of two lines, to describe the procedure as a means of treatment of shock. One who has seen this work and its results during the late war as it was done in the hospitals of our army at the front, can but notice this omission. It is the reviewer's impression that the civilian surgeon in the average general hospital habitually overlooks this potent life-saving agent.

Transfusion of blood is a measure done casually or not at all. It is usually too late to secure a suitable donor when the emergency arrives. The maintenance, in conjunction with a hospital of a suitable group of potential donors will cost something, and involve considerable labor. The money expended thereon will not make a show, as in a building; but by this means lives can be saved that otherwise would be lost. If the profession does not appreciate this the laiety cannot possibly bring themselves to provide money for such an institution.

The author attempts an alphabetically arranged list of diseases in which the therapy is discussed. In most of these conditions there is only a rare indication for intravenous procedures. It would have been better had these chapters been omitted. They are distinctly below the standard of the first half of the block which gives very admirably the general principles of intravenous technique. The illustrations of the steps of technique are clear and excellent.

J. BIRNEY GUTHRIE, M. D.

Preventive Medicine: By Mark F. Boyd, M. D., M. S., C. P. H. Second Edition Revised. Philadelphia and London. W. B. Saunders Co. 1925.

The second edition of Doctor Boyd's deservedly popular manual on preventive medicine maintains the high standard set by the earlier edition. New material has been incorporated and the scope of the book has been extended in several directions. While the work is brief nevertheless it contains the minimum of knowledge of the subject that should be possessed by the student or practitioner of medicine. It should be useful to one who, having a background, is preparing for an examination in sanitary science. The numerous references are most useful guides for one who desires to follow in detail any of the sub-divisions of the broad subject of preventive medicine.

FRANCIS M. MUNSON, M. D.

Approaching Motherhood: Questions and Answers, by George L. Brodhead, M. D. Paul B. Hoeber, New York. 1925.

The author has chosen an excellent way of bringing to the attention of the prospective mother, the importance of prenatal care. The old belief that pregnancy is a simple accident in life, which requires nothing but patient waiting for the final outcome, would be well erased from the minds of those reading Approaching Motherhood, so well written, in a simple language that could be understood by the average mind. Dr. Brodhead should be congratulated in having so well concentrated in this valuable brochure a subject which, though vast, embraces most important questions which should be known by all women. I am glad to emphasize that its simplicity in style and its inexpensiveness should make it possible of being procured by all expectant mothers.

ADOLPH JACOBS, M. D.

Allergy Asthma, Hay Fever, Urticaria and Allied Manifestations of Reaction. By William W. Duke, Ph. B., M. D. With Seventy-five Illustrations. St. Louis. The C. V. Mosby Co. 1925.

The profession has needed for some time a complete discussion and especially an exposition of the clinical manifestations of the phenomena known under the various titles of "anaphylaxis", "serum sickness," "allergy," "protein sensitization," "specific hyper-sensitiveness" and "atrophy." This is now available in Doctor Duke's new book. The volume is divided into two parts, the titles of which are self-explanatory. Part 1 is headed

"A Discussion of Experimental Anaphylaxis, Serum Sickness' Bacterial Allergy, and illnesses in Human Beings Traceable to Specific Hypersensitiveness to Material Agents," Part II "Reactions caused Specifically by Action of Physical Agents, such as Light, Heat, Cold, Mechanical Irritation, Freezing, and Burns, and in the Case of Heat Sensitiveness, Indirectly by the Effect of Mental or Physical Effort." The subject is interesting theoretically and of increasing importance practically to the profession and it is well that physicians be informed upon it. It is not only a common cause of illness, but is a rather frequent cause of severe illness and, in rare instances, even of sudden death. A knowledge of the recent advances in laboratory research and in clinical observations as presented in this book will be of genuine value to the medical practitioner.

FRANCIS M. MUNSON, M. D.

Osler's Modern Medicines: Edited by Thos McCrae, M. D., and E. H. Fink, M. D., Vol. 1. Philadelphia and New York. Lea & Febizer. 1925.

The first volume of Osler's—Third Edition—devoted to Bacterial Diseases, Non-bacterial Fungus Infections, and the Mycoses, has been received. It is regretted that the several volumes comprising this valuable work are being published at long intervals and cannot be reviewed collectively.

Volume I covers essentially the same field as Vol. I of the second edition, with the addition of recent knowledge pertaining to the diseases discussed and with the addition, also, of an introductory chapter by Sir William Osler on the "Evolution of Internal Medicine".

The chapter on infectious diseases of doubtful or unknown etiology, which includes small pox, yellow fever, typhus, etc., has been eliminated, to appear, no doubt, in a later volume.

The subject matter has been exhaustively presented and brought as nearly to date as a work of this character will permit.

To those who are familiar with the previous editions, it is needless to offer any further recommendations. To those who are unfamiliar with them, this volume is most heartily recommended.

J. HOLMES SMITH, JR.

A Manual of Gynecology: By John Cooke Hirst, M. D., F. A. C. S. Second Edition. Revised with 195 Illustration. Philadelphia and London. W. B. Saunders Co. 1925.

In the second edition of his manual Professor Hirst has brought it quite up to date. It has been reset, many illustrations added, and the text has been increased by some forty pages of new material. The most striking changes and additions are: The Rubin test for sterility, including also the Huhner test; cystoscopy and pyelography, which has been rewritten; the detailed technic for the preparation and use of radium in its various fields; diathermy in gonorrheal endocervicitis; and the chapter on endocrine glands. It is an eminently practical book; it tells the reader at least one thing to do for each condition with which he is confronted.

FRANCIS M. MUNSON, M. D.

The Old Time Country Doctor: By William Allen Pusey. Chicago, American Medical Association. 1925.

This reprint of an essay first appearing in the Journal of the American Medical Association, is a most interesting characterization of a type very seldom seen today, but gratefully remembered. The subject in this case is the author's father, and the locality, Kentucky, but the delineation applies equally well to the family physician of yesterday in the memory of each of us, known and loved by the entire community.

MARY LOUISE MARSHALL.

Empyema Thoracis: By Evarts A. Graham, A. B. M. D. Illustrated. St. Louis. The C. V. Mosby Co. 1925.

Professor Graham's monograph is not an attempt to cover the subject of empyema in an exhaustive manner. He correctly states that the principles and not the details are the most important and maintains that if the treatment of empyema is conducted in accordance with the principles discussed in the essay the mortality will be considerably less than that which existed before the recognition of those principles. The newer work done on the subject is discussed in an addendum so that this important topic is brought quite up to date.

FRANCIS M. MUNSON, M. D.

PUBLICATIONS RECEIVED.

W. B. Saunders Company, Philadelphia and London: Lectures on Nutrition, 1924-1925". "Our Present Knowledge of Heredity, 1923-1924".

"Abdominal Operations", Volumes I and II, by Sir Berkeley Moynihan.

P. Blakiston's Son & Co., Philadelphia: "Slit-Lamp Microscopy of the Living Eye", by Dr. F. Ed. Koby. "Memoranda of Toxicology", by Max Trumper, B. S., A. M. "The Book of Prescriptions", by E. W. Lucas, C. B. E., and H. B. Stevens, O. B. E.

Paul B. Hoeber, Inc., New York: "Scoliosis", by Samuel Kleinberg, M. D., F. A. C. S.

Lea & Febiger, Philadelphia and New York: "A Medical Formulary", by E. Quin Thornton, M. D.

REPRINTS.

"The Back or Dorsal Structures from the Internists' Point of View", by J. Madison Taylor, M. D. "Convalescent Procedures as a Clinical Fine Art", by J. Madison Taylor, M. A., M. D. "Chronic Disease as an Entity", by J. Madison Taylor, A. B., M. D. "The Legitimate Boundaries of Public Health Activities", by Ennion G. William, M. D. "History and Origin of Syphilis", by Robert Emmet Jameson, M. D. "Physical Defects as Revealed by Periodic Health Examinations", by Louis I. Dublin, Eugene Lyman Fisk, and Edwin W. Kopf. "The Opportunity of the General Practictioner in the Field of Periodic Health Examination Service", by Eugene Lyman Fisk, M. D.

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